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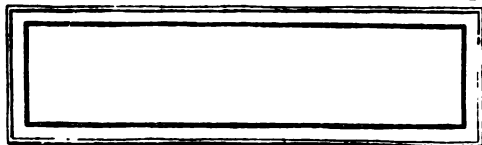
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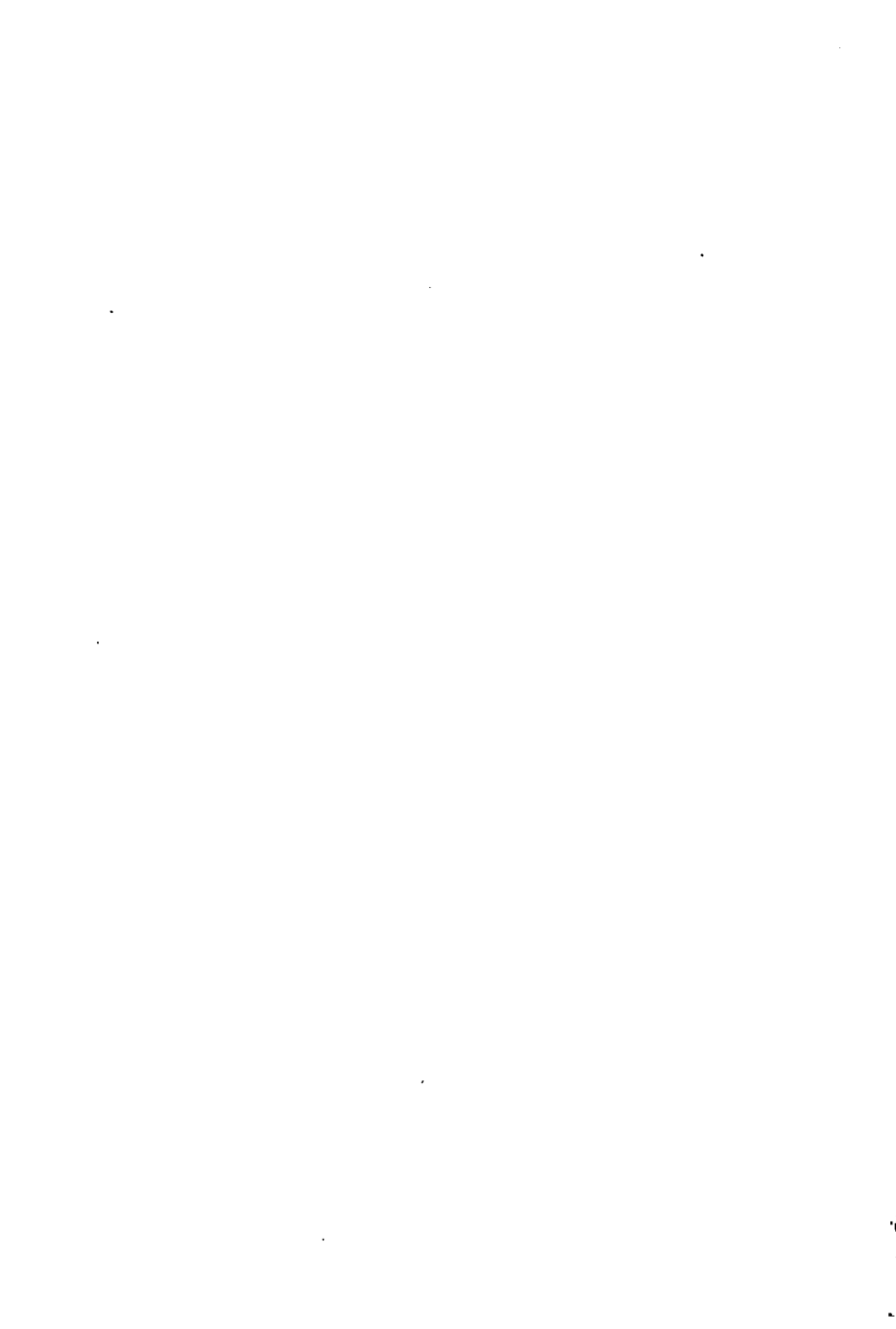
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PRINCIPLES OF BUSINESS

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BY
CHARLES W. GERSTENBERG
"PROFESSOR OF FINANCE IN NEW YORK UNIVERSITY

AUTHOR OF "MATERIALS OF CORPORATION FINANCE,"
"LAW OF BANKRUPTCY," "ORGANIZATION
AND CONTROL," "PERSONAL POWER
IN BUSINESS," ETC.

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Animal Institutions

PREFACE

This book I have written for the experienced business man and for the young man just stepping out into business life.

The man of experience will read it, I think, because his experience has gradually made him a specialist in certain phases of business activity and has limited his outlook to those things which from day to day he is compelled to do. He needs to have his vision broadened, to be taken out of the rut of everyday duties and to be shown the business machine as a whole.

The book is offered the young student on the ground that we see an object in its entirety before we begin to see its details. First, we see the building, then the doors and windows, then the details of design about the doors and windows, and last we bring all the elements together again and see how they are related to one another and perform their functions in making the building accomplish the purposes for which it stands.

Moreover, the young student should have his new studies connected with his studies in the sciences and arts that have been pursued in the preparatory school or in the University college of pure arts and sciences. Business, after all, consists in turning all of man's knowledge and power to the end of making profits. I am fond of paraphrasing Henry Ward Beecher's definition of oratory—"truth pressed home with all the resources of the living man"—thus, business is profits brought home with all the resources of the living man. For this reason

business science, in this book, is not conceived as knowledge of the narrow fields of production, marketing, finance and accounting, but as a science whose relation to the other sciences is so intimate that the division line between them is hard to draw. In the first part of the book, then, will be found a discussion of scientific method generally as it may be applied to business, and also a brief treatment of the debt which business owes to chemistry, engineering, the natural and the social sciences.

Had it not been for the assistance of friends and colleagues I should never have attempted to bring the whole science of business within the scope of a single volume. Their work has been indispensable. To my colleague, Mr. Gould L. Harris, and to Mr. Henry Brach, C.P.A., I am indebted for assistance in the chapter on Accounting, and to Mr. William Longino for the chapters on Advertising and Traffic. Professor Richard P. Ettinger has read the manuscript and given valuable suggestions for improvement. Messrs. J. W. Stannard, of the Standard Parts Company, Louis M. Levine, with Ladenburg, Thalmann and Company, and Mr. E. E. Jackson, have helped in the construction of the book at one point or another. But to Mr. John L. Sinclair, who has been untiring in his assistance and whose criticisms while always kindly have never been superficial or lacking in discernment, I am chiefly indebted for whatever the book contains that may commend itself to the business man, the business student, or the business teacher.

C. W. G.

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PRINCIPLES OF BUSINESS

CHAPTER I

THE SCIENCE OF BUSINESS

What is business?—It would seem to the ordinary man about town to be an unnecessary task to attempt to define a term so commonly used as the word "business." If we say that business is the aggregate of all the activities whereby man makes his living, or if we define it as the production of goods and services and the processes whereby they are made useful and consumable, we shall probably have added nothing to the clearness with which we commonly think of the word "business." But one thing we can make quite clear about this term, and to do so will help in large measure to explain just what this book is about. Business is a group of activities; it is not the body of rules that tell how those activities can accomplish the most desirable results. When we speak of "baseball," for example, we think of some organized activities that make up the game of baseball. That there are rules to be followed in playing the game does not constitute those rules baseball. Indeed those rules generally mean that if they are not obeyed, the result is not baseball, but some other form of activity. So there are rules that business must follow or the result will be not business, but some other activity. In a simple activity like baseball, the rules can easily be collected; but in an almost

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infinitely complex collection of activities like business, the rules are not simple, nor is it possible to formulate them with precision.

The science of business.—After we have learned the rules for playing baseball or any other game, we must still learn how to play the game well. As different contingencies arise in the game, we learn to recognize them and to find means of overcoming the difficulties they present. One of the greatest advantages of scientific method applied to any activity is that difficulties may be anticipated. We can save the pound of cure by applying the ounce of prevention. Compare, for example, the untutored game of baseball played in the vacant lot with the scientific game played by the professional clubs. The training the professionals get enables them to adjust their positions on the field the more effectively to meet the probable outcome of a present condition. Most men will appreciate this argument if they will recall how the fielders “lay out” when a heavy hitter steps to the plate as batter, or how the in-fielders move up nearer to the plate when a man is on base with no players out.¹

Thus gradually we collect a body of rules the main purpose of which is not to tell us how to play the game, but how to play it well. In golf, for example, we have such rules as, keep your eye on the ball, keep your head down, don't sway the body, and the like. One may violate all these rules and still play golf. Indeed we may

¹ An excellent application of this principle in business will be found in an article entitled “Anticipating Buying Emergencies,” *Iron Age*, December 2, 1915, pp. 1300-1302, and reprinted in Cope-land's *Business Statistics*, pp. 411-417. See also Jevons, *The Principles of Science*.

find exceptional cases where, though some of these rules are violated, *good golf* is played. But in the long run, obedience to these rules, all founded on the basic principles of cause and effect, will produce the best results. Now, the body of all these rules for playing good golf is called the science of golf. And when these rules are put into practice, we have the *art of golf*.

Business is an art. But it has its corresponding science. The science of business is the systematically arranged knowledge which experience has taught us to apply in our activities if we would be successful. A decade or so ago the idea of science in business was scoffed at. Men boasted of being "practical." In a country like the United States, populated with free and intelligent people demanding many things and with ample resources to supply those demands, it was easy for the practical man to succeed. Almost anybody can catch fish in a stocked pond, but it takes an expert to find and land his catch in the open waters where fish do not abound.

"The practical man," said Disraeli, "is the man who practises the errors of his forefathers."

The scientific spirit in business.—But science has already accomplished too much in business to need any defense. When business became a matter of machinery as well as of crude labor, technically trained men were drawn into its activities and it was but natural that their scientific spirit and habits should gradually affect all departments of business—even those in which the technical men were not directly concerned. Moreover, as business units of activity grew in size, the element of waste, though relatively perhaps no larger than it was

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before, became, in absolute amount, so huge that business could afford to hire experts to study and analyze its processes in order to detect and eliminate the waste. Gradually almost every department of business is being subjected to the processes of observation, analysis and synthesis that may be termed the essence of the scientific spirit. Not only do we have "scientific management" of labor in shops, but we are getting it in selling, advertising and other departments.

Content of the science of business.—It behooves every man and woman in business, then, to learn something of this most universally useful of all sciences, the science of business. Of what does it consist? It may be said to consist of three parts, termed, for the want of better names, the environment of business, the functions of business and the kinds of business. Some business men will need to know more about certain parts of the science than will other men, or than they themselves will need to know about other parts of the science. Let us see in broad outline of what each of these three parts of the science of business consists.

The environment of business.—All activities of man are interrelated. You cannot study English, or physiology, or yachting, or business without learning something about other matters. Some activities are fairly self-contained. One doesn't need a wide range of learning to play golf or tennis. True, one might make a very deep study of the mathematical science of ballistics an adjunct to the study of the science of golf, but the study would be of relatively small practical advantage. On the other hand, in some activities a fairly wide range of

knowledge is directly helpful. Yachting, for example, will easily lead one into a study of navigation with all its complexities and into a study of winds and tides and geography and engineering and a host of other interesting subjects. The more one knows of some of these subjects and the more subjects he knows at least something about, the better yachtsman he will be. If we were writing a book on the science of yachting, we should have to deal more or less, depending upon the detail with which we were treating our subject, with some of these surrounding sciences.

There is hardly any branch of human knowledge that does not have a potent effect somewhere in business dealings. But there are certain branches of knowledge which have direct and almost universal application in business matters. These branches we may call the environment of business. The well-informed business man will have to know something about them. In the next chapter, we shall consider the more important branches separately. Here we can merely indicate in a general way that the science of business, as we conceive it, does include these outlying sciences. Just as the physician and the lawyer must have a broad training, the business man must needs lay the roots of his special training in business science and practice in an understanding of mathematics, physics, chemistry, economics, law, history, philology and the other departments of human knowledge.

Functions of business.—Business itself consists of the production of goods and commodities, and of their transportation and exchange. To study these things is to study business itself. As was stated in the preceding

section, we cannot study any one of these processes without gradually working off into other sciences. But there are certain features of business peculiar to itself, which features, taken together, we may call the functions of business. In a rough way, these functions may be divided into four parts called production, marketing, financing and accounting.

Production includes the study of the organization and management of the processes required to transform raw material into useful commodities and simple energy into useful services.

Marketing includes the study of all the means whereby goods are exchanged and transported from one owner to another.

Financing, in a sense, is not a true function of business, since it merely facilitates production and marketing; and the same may be said of accounting. Financing, however, may be defined as that function of business which facilitates production and marketing through the use of funds. And accounting may be said to be that function of business which analyzes the other functions and properly records the results of the analysis to the end that those other functions may be intelligently carried on.

There may be elements of the science of business which are generally recognized as parts of the science of business but which cannot easily be fitted into any one of these four functions. We shall find little difficulty, however, if we stick close to our definitions as given above.

Some may find fault with our classification because it does not make administration a separate function. Administration is nothing other than a composite of the

four functions. We may define it as that department of business which directs the four functions of producing, marketing, financing and accounting. If we regard it in this light, administration does not require a separate treatment.

Kinds of business.—There are certain principles applicable solely or with peculiar force to certain kinds of business. To get a complete grasp of the entire science of business, therefore, we must study separately some of the more important kinds of businesses, that we may understand their peculiar principles. Of course it would be impossible to make a study of every separate form of business enterprise, but the broadly trained business man ought to understand the principles which govern those undertakings with which he is likely to come into contact. And again, other businesses should be studied, not because they enter directly into the lines and activities of a great many people, but because their processes are so old or are conducted on such a large scale that they must become a matter of interest to every well-informed man.

The true nature of business.—In passing to a detailed examination of the science of business we must not leave the reader with any hazy ideas on the true nature of business, and so we will pause carefully to define and explain the term business. Business ought to be defined as the economic activities of men for the purpose of securing profits or of acquiring property rights.

Economic activities.—We mean by economic activities the activities which are social and which are not anti-social. There was no business in the days when each

man produced the goods he consumed. It may have taken a great amount of industry to acquire the goods that were to be used, but industry alone is not business. Business implies a social structure organized and working as a unit to produce its goods. Business consists essentially of the bargaining within this social structure for the purpose of gaining profits—the social end being the satisfaction of society's wants.

Moreover, the word “economic” implies that business activities are not anti-social. Here again we must lay stress on the fact that business implies free bargaining. To get a better understanding of this let us trace back roughly the history of man's efforts to satisfy his wants. We can do this best with a set of simple diagrams.



The above figure represents crudely what is taking place today in business. A and B are two persons coming into business relations. Each has services and property—either or both—to sell. P is the physical self, and upon its strength and virility depends the strength and keenness of the will (W) and of the intellect (I) and the emotions (E). The process of bargaining takes place through appeals to the intellect (arguments) and to the emotions (persuasion), the purpose being to overcome the will and to cause the person to act in respect to his property or services. This is the modern stage of business—sometimes called the credit stage. It also covers the

next earlier stage of business called the money stage. But back of the money stage was the age of barter—the stage when goods were “swopped” directly for goods. Now the word “barter” comes from the old French, and, as those of the passing generation who have had any experience with old-fashioned “horse swopping” may well know, means “to cheat.” In this stage there was no true free bargaining. Property within the tribe or the family was generally held in common and exchange took place when a wandering outsider offered some exotic goods for necessary food or raiment. Since all outsiders were looked upon as barbarians, it was felt that he was legitimate prey for a hard bargain and indeed, it was expected that he would reciprocate the feeling. There was no general social structure beyond the clan or tribe. As we see in the next diagram, there was no appeal from intellect to intellect and no genuine appeal from emotion to emotion. There was really a circumventing of the intellect and of the will by misrepresentations and by appeals to the baser emotions.

Business, if we may call it “business,” of the type exemplified here, makes little or no contribution to the economic and social well-being of the community, as does the modern type of business, which engages all of the highest human powers.

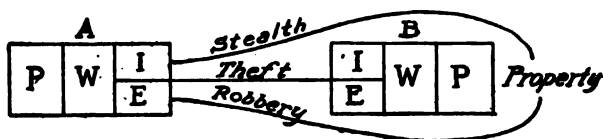


In the stage of industry preceding barter we had very little exchange. Wants were satisfied by slaves. Thus

we find the slave receiving bare necessities for his services.¹ Thus we have the following diagram:



Finally we get back to the primitive stage when there was practically no industry, each man killing his game and each woman poking about for her edible herbs. What little capital the man had, such as a rudely fashioned spear, was buried with him at his death.² This stage merged naturally into the so-called pastoral stage in which men bred animals as a more certain means of having them when needed and the women, instead of searching for edible plants, cultivated them and thus made a start in agriculture. What little property exchanged hands did so either by gift—families and tribes held property in common—or by theft. Thus we have the primitive exchange illustrated as follows:



¹ It must not be thought for a moment that these stages of business existed in sequence in all places of the earth. There was a great deal of overlapping. Indeed, as those who are acquainted with geographical studies or such stories as those of Stewart Edward White well know, the different stages of business and industry all exist at the present time and are represented in different parts of the world.

² Most of the facts for this history are obtained from Bücher's *Evolution of Industry*.

Modern business has nothing to do with theft, with slavery or with deception. Modern society calls such practices criminal and discourages them not only by law but by ostracism.

Securing profits.—Some students may object to the apparent narrowness of our definition of business. They will object to it on the ground that it seems to point to selfishness and to self-seeking and makes no suggestion of the ulterior purpose of satisfying human wants. It is precisely here that we can make a distinction between economics "the social science of business" and what we in this volume have called the "science of business." Let the economist deal with the social aspects of business. The business man is concerned as a business man with making profits and with acquiring property rights. This does not mean, however, that the business man is an extra-social being, living without the pale. It does not mean that he does not recognize his social obligations or that he does not know that whatever injures society must injure him.

It means that the business man as such is interested in making profits, though as a member of society his profit-making must not injure the public good. In the long run, the business man who makes his business conform to current social ideas on what is good and what is bad for society, will make the most profits. Indeed, it may be insisted that profits acquired by practices contrary to recognized current social standards are not "profits" but "loot."

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CHAPTER II

THE ENVIRONMENT OF BUSINESS

The sciences.—For our purposes, a complete classification of the sciences would be an unnecessary task. The following table is sufficiently complete, for the reason that in this book we are concerned only with the important problems of business upon which certain bodies of information, called sciences, can possibly throw some light. We shall examine these sciences briefly to see what they hold of interest to the well-informed business man.

Pure sciences.—Logic, Mathematics.

Natural sciences.—Physics, Chemistry, Astronomy, Geology, Biology, Botany and Zoology.

Social sciences.—History, Economics, Politics, Jurisprudence, Sociology, Psychology, Ethics and Philology.¹

The pure sciences.—Mathematics and logic are very old sciences. In fact, these two abstract sciences are very closely related; "the basis of logic is the basis of mathematics also."² They are the sciences of clear thinking. Logic is less directly connected with business than is mathematics, but its discussion of how knowledge is

¹There is much justification in any criticism which objects to including Psychology, Ethics and Philology in the social sciences, though the inclusion may be justified on other grounds than convenience.

²Lecture on Mathematics by Professor C. J. Keyser in *Columbia University Lectures on Science, Philosophy and Art*.

obtained, of how laws are constructed, and of how errors and fallacies in observation and reasoning may be detected and guarded against must be of benefit to men in every path of life. A careful study of logic and mathematics makes for straight thinking. Perhaps we are right today in our universities in avoiding the strict discipline of the mind which required the student of the eighteenth century to burden his memory with the wearisome nomenclature of formal logic and to test his talents on useless information. But certain it is that the university students of those days were closer reasoners than are the average men of our contemporary colleges.

In a comparatively new science, like that of business, in which the laws governing its phenomena have not been generally formulated and clearly stated, logic is especially important in pointing out the workmanlike way for the researcher to study the phenomena, to make proper inferences, formulate plausible hypotheses as to the causes and consequences of these phenomena and to proceed to verify those hypotheses and thus deduce the laws of the science.¹

Mathematics, the science of numbers, has a direct relation to business. It is of universal importance. In its lower branch, simple arithmetic, it is constantly used by the laborer and the greengrocer. Algebra, that branch which uses arbitrary symbols in place of concrete objects, and then subjects them to all forms of logical treatment, has a practical use for almost every man of affairs. In its higher branches mathematics is indispen-

¹A simple text on Logic, suitable for the business man and the student of business, is Jones's *Logic, Inductive and Deductive*. (Henry Holt & Co., New York. 1909.)

sable to certain lines of business. The building of bridges and of tunnels, the installation of electric systems, the calculation of astronomical events, the construction of insurance contracts, and the computation of bond values all call for a knowledge of higher mathematics. "Already the economic student, when he uses the word marginal instead of average, or the merchant when he speaks of a flattening price curve, implies the application of the differential calculus to economics; and a few generations hence social theorists may be using, and newspaper readers may be following, forms of thought whose essential principles are now understood only by Professor Bowley and his mathematical colleagues."¹

Closely allied with mathematics is the science of statistics, defined by King in his *Elements of Statistical Method* (p. 23) as "The method of judging collective natural or social phenomena from the results obtained by the analysis of an enumeration or collection of estimates." But a short time ago, the methods of statistics were known and used only by a few government-employed experts. To-day statisticians are found in many business offices. They advise the purchasing department in the ordering of raw materials, the production department in the adjustment of labor problems and the determination of output, the sales department in the establishment of price, and the treasurer's department on matters of financial policy. The execution of these duties requires the services of a well-trained statistician with a broad knowledge of economic principles. The formation recently of The American Association of Financial Statisticians bears testimony to the rapid growth of the use of statis-

¹ Graham Wallas, *The Great Society*, p. 216.

tics in a field that less than twenty-five years ago probably did not regularly employ a single expert. The multiplication on the market of adding and other computing devices and the extended use of the Hollerith and Powers tabulating devices point to a growing appreciation of the value of statistics to everyday business.

There is one use to which statistics are put which deserves special mention. Economists tell us that profits form the last share in the distribution of the income derived from business. After wages, rent and interest have been paid, the business man, or entrepreneur, as he is called, gets his share of the income in the form of profits. His share, then, depends on what he can get for his product above the expenses of production. What he gets in the aggregate is called the price of his product, and this depends in the long run on the supply of and demand for the product. The modern business man sees how important the price element is, and does not permit any of the constituent parts to be determined by fortuitous chance any more than is absolutely necessary. To control the situation he resorts to statistics. In gathering these statistics the government and private enterprises, such as the daily press and the special business and financial magazines, come to his aid. What the business man must do for himself—and here is where a study of statistics brings its reward—is to take the statistics thus collected and interpret them for his own use. First he must find out what he can about the supply of goods, and his deductions here will tell him where and when to expand or contract his productive operations. Next he will search for the demand. Here again

he will make his deductions as to whether he ought to expand or contract. But surrounding the whole problem is the broad question of the general level of commodity prices—is it going up, or going down? Then will come the question of the purchasing power of the community—and to answer this question the keen business man will examine the so-called barometers which indicate generally whether business is moving toward a period of prosperity or toward a period of depression.

It will be seen that a study of business statistics is of inestimable value. It enables a man to make proper provisions for changing conditions. It enables him to forecast what is going to happen. "Bankers, financiers, and the heads of manufacturing and mercantile enterprises must constantly study present conditions and future prospects. Many manufacturers, for example, buy materials and start manufacturing operations months before the finished goods are placed upon the market. Plans must be made and production regulated according to the conditions which such producers expect to encounter at a later time. If they err in judgment, they are placed at a disadvantage which may prove serious. The maladjustment which occurs during a period of crisis may be disastrous. If manufacturers and merchants can be forewarned, fewer will be caught unawares and the severity of the shocks will be alleviated."¹

Statistics are also used in business, in regulating sales, in checking advertising results and in studying the oper-

¹ Copeland's *Business Statistics*, p. 98. Several business concerns collect, classify, arrange, and partly interpret business statistics for their customers. The Babson service and those of Prentice Hall Inc., and the Standard Statistics Company are perhaps the best known.

ating costs and results of factories. Moreover, they are used by the chief executive in making effective and efficient the control of all the branches of a business enterprise that come under his general supervision. In preparing these statistics for the executive, the statistician must choose such units of product, service, accomplishment or cost as will enable the executive to make logical comparisons and to draw conclusions. These conclusions are based upon comparisons of current units with current units of other plants or enterprises or with the past performance of the same business.¹

Physics and chemistry.—Perhaps most people think of physics and chemistry—the sciences of the molecule and of the atom—when the word “science” is mentioned. Certainly these two sciences have made the most spectacular strides in the last generation and there seems to be a complete alliance between them and business. One has but to mention electricity, gas engines, moving pictures, the submarine, flying-machines and X-rays to bring vividly to mind the progress of physics and the debt which business owes it. From the dawn of history until only about 150 years ago—that is, through an age of about 10,000 years—less progress was made in locomotion than in the 150 years just past. And when we consider that every single phase and function of business may be reduced to a matter of motion, we can realize

¹The growing importance of statistical investigations in all branches of business warrants the somewhat extended statement of the relation of statistics to the science of business given above. The student who would understand more about the problems which statistics undertakes to solve for the business man and about the way it proceeds to solve them is referred to the various essays reproduced in Copeland's book of readings entitled *Business Statistics*. (Harvard University Press, 1917.)

how deep is the debt of modern business to modern physical science.

The problems which business brings to chemistry are legion. A large part of the industry of America was disorganized at the outbreak of the European war because our chemists had not learned how to make dyes. Then for the first time many people recognized the particular everyday utility of expert chemical training. But for years the chemist in his laboratory had been working on the problems of the business man. To his efforts in part was due Germany's unexpected war endurance. German chemists turned industry upside down to supply the wants of a people that had imported \$2,500,000,000 worth of goods a year and then had been cut off from most of the civilized world. Making clothes of paper and making feed of sawdust, yeast and gas-house refuse were inventions born of necessity that the German chemists presented to industry while it attempted to keep up with the demands of a besieged population.

In America, for many years, chemists have been at their wits' end to meet the demands of the business man. Here is a partial list of business inquiries that were brought to one of them: "The dentists are desperately in need of a cement that is 'absolutely' insoluble in the mouth; manufacturers of toilet preparations need a method of compressing powdered pumice, for mixing it with Portland cement is not satisfactory. The glass-makers are eagerly desirous of a method of manufacturing a ruby glass in the pots, for, as it is and always has been, the ruby color of the glass flashes out on one or more reheatings—an expensive operation. A certain

enormous manufactory of artificial cereals in packages is seriously concerned with the damage to these same packages by rats, and it desires, if possible, some method of making these packages distasteful to rats without conflicting with the pure-food laws. Another, equally huge in the extent of its manufacture and its operations, is embarrassed through the curious fact that while grasshoppers will have nothing to do with binder-twine made of imported flax, they avidly devour the domestic product, and with a consequent loss of a million a year to the company concerned, to say nothing of its loss of reputation among the farmers."¹ It is well for the American business man to know generally that in his midst are men who are not content with things as they are, but who draw upon expert scientific knowledge and training to prevent waste and to promote production and efficiency. "Chemistry," says the Twelfth Census Report, "is the intelligence department of business."

Other natural sciences.—While astronomy is perhaps the oldest science, it also contributes the least to modern business. Our knowledge of the heavens does mean a lot to business. Time is accurately calculated and navigation is made possible through the process of finding the longitude and latitude and through the process of determining the error of the compass. But little progress is being made in the science that is of practical importance to the business man, nor does the science enter in any large degree into the business life of today.

Geology and its closely associated science, mineralogy,

¹Robert Kennedy Duncan's *Some Chemical Problems of Today*, pp. 14-15.

do everyday duty for the business man. The United States government spends nearly half-a-million a year in making geological investigations and publishing the results, and perhaps the separate states of the Union spend an equal sum. Sources of mineral supply are thus discovered, and capitalists are given some authoritative data upon which to base their judgment when considering applications from promoters for funds with which to exploit the mineral resources of a given region.

Biology is the science of living matter. It has made wonderful progress in the last quarter-century. Bacteriology, for example, a branch of biology, has aided business not only in preservation of life and health, both of which are considerations of the utmost importance in the production process¹ but in the production of many useful commodities through the use of bacteriological agencies.

In passing, we ought to give credit to biology for its enunciation of the principle of the survival of the fittest. The pure theorist in business and economics cannot afford to overlook this principle in the study of such questions as monopoly and competition, wages, and the like.

Summary.—The importance of the sciences thus far studied is confined quite closely to the general field of production. When one thinks of business, one usually does not give production a conspicuous place in the mental pic-

¹ The regulation of the dairy industry is an example. Bacteria counts in milk-samples not only practically determine the grade and consequently the selling price, but high counts force low-grade dairies out of business or compel the owners to remodel their barns and equipment as well as to improve their methods of operation.

ture. Business is generally conceived as related to the processes of distribution rather than to those of production. Thus we say that the business man is not the factory manager or works superintendent, but the man who sits in the office and directs the marketing and the financing. In other words, the business man does not study the relation of his business entity to the production processes as much as its relation to the outside world. The fact is that there is a constant tendency to commit the problems of production to salaried men of experience and expert technical training, and to hold them responsible for general results. The broader questions of policy involved in the relation of the business and its product to the outside world are reserved to the entrepreneur himself—to the business man. The problems arising are considered business problems.

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CHAPTER III

THE SOCIAL SCIENCES

The place of the social sciences in the science of business.—It is for the reason touched upon at the close of the preceding chapter that the sciences designated as social sciences have been so heavily drawn upon by teachers and students of business science. The social sciences, indeed, are generally regarded as the base upon which the business student must rear his specialized knowledge of the science of business *per se*. Perhaps the diagram given below, though open to criticism as being too rigid, and misleading somewhat in some of the relations it indicates, approximates the structure of the science of business and its environment.

| | | |
|-------------------------------|-------------|-----------------|
| Production | | Marketing |
| Accounting | and | Financing |
| Natural and Physical Sciences | | Social Sciences |
| Logic | Mathematics | Statistics |

Because of the more intimate relation of the social sciences to the problems generally considered to be peculiarly of a business nature, we shall have to devote more space to them than we have devoted to the natural sciences.

What are the social sciences?—It is unnecessary for

us here to go into any lengthy discussion of the place of the social sciences to analyze them into the many branches that have been evolved from the specialized studies of writers and teachers. We shall briefly take up history, sociology, economics, politics, jurisprudence, ethics and psychology, and show to what extent they may contribute to the training of the well-informed business man. In a general way, all of these sciences deal with man in his relation to his environment and to his fellow men, and are therefore properly called social sciences.

The shortcomings of the social sciences.—Some people doubt whether there can be any social sciences. Organic society is so changeable, so the argument runs, that generalizations are well-nigh worthless. It must be admitted that general laws deduced from collections of social phenomena may be so far from the truth when applied to an individual case that they may lead to ridiculous results. I have known some men with weak chins who have had strong wills. The fact is that social science cannot give positive laws but depends largely on averages. From these averages we can expect to find little deviation in individual cases, but on the other hand, the average may not exactly represent any single individual of the number that entered the sum from which the average was derived. This whole subject is so important, not only to the business man but also to the professed scientist, that we shall take the space to explain, in the words of another, just what claims the social science can and should make as a means for providing not only an interpretation of human conduct but for guidance as well. In thus marking off clearly

the limits beyond which the social sciences cannot go, we shall anticipate the complaint of "the practical man," who insists that science is useless in business because sociology and economics will not do as much for handling a road-gang as "horse sense" or Irish wit.

The services of social sciences to human arts.—The quotation referred to in the previous paragraph is from J. A. Hobson's *Work and Wealth, A Human Valuation* (pp. 340-347), and is as follows:

"Science takes its stand upon a twofold application of the assumption of the uniformity of Nature, first, that all differences of composition can be treated as differences of quantity or degree, secondly, that history repeats itself. Now, just so far as these assumptions fit the facts, Science is valid for interpretation and for guidance. This explains why astronomy, physics and chemistry are more 'exact' sciences than biology or psychology, and why they are able to give more reliable and authoritative rules for the arts of navigation, engineering and drug-making, than the latter can for medicine, for breeding or for education. * * * In all arts dealing entirely or mainly with inorganic matter science occupies a seat of high authority, because of the high relative uniformity of this matter and the comparative regularity of its behavior. In physics or in inorganic chemistry the individual differences or eccentricities of the material are so trivial that they can usually be disregarded, and history repeats itself with so much regularity that quantitative laws apply.

"The passage from the inorganic to the organic involves, as we recognize, a double assertion of the quali-

tative: first, in respect of the unity and uniqueness of the organic structure, and secondly, by reason of the novelty that attends each act of organic change, vital movement, assimilation, growth, reproduction or decay. The uniqueness of the individual organism and the novelty of each of its changes are an assertion of the qualitative nature of the subject-matter. So far as this qualitative nature prevails and counts for 'conduct,' scientific analysis is impotent for interpretation and advice. When organic matter attains the character of consciousness and the still higher character of self-consciousness, the qualitative considerations reach a maximum, and the interpretation and directive power of science a minimum. But that minimum must not be disparaged. It is not inconsiderable. The assistance which scientific laws can render to the finest arts of human conduct is very important and is capable of constant augmentation. For so far as human nature is uniform and stable among the units which constitute the life whose conduct and welfare are in question, the interpretation and direction of science has validity. To this extent, a utilitarian calculus, based upon analysis of past experience, can aid the statesman or the philanthropist in working out his design. In the region of industry the extent of this scientific service will be even greater than in the arts of conduct whose material is more exclusively organic or physical. For industry, considered as an art of human welfare, will consist largely in the orderly and progressive adaptation of inorganic matter, or of organic matter whose organic differences can be ignored, to the satisfaction of those needs of mankind in which men are

similar. That is to say, in industry there exists and will remain a great deal of work and of consumption which is essentially of a uniform or routine character, requiring to be done by measured rules, and depending for its utility upon the exclusion of all individuality or quality. This applies, not only to those industrial processes which we term strictly mechanical, but to a great many others where quality is a matter of comparative indifference. In the progressive economy of human welfare mechanical or routine production will even frequently displace an art in which quality was once displayed. So home-baking, into which no small degree of culinary skill could go, has given way to machine-baking, in which the element of personal skill plays a diminished part, and on which the individual taste of the consumer exerts little directive influence. This may be taken as a typical example of the displacement of qualitative art by quantitative mechanism. It is, of course, of very wide extension, being, in fact, commensurate with the application of scientific methods in the world of industry. Indeed, the sciences of chemistry and physics, botany and biology, are everywhere invading the 'arts' of industry and imposing 'rules' upon industrial processes. Even more significant is the application of the still infantile science of psychology to the arts of business organization and enterprise and of marketing. How can psychology assist in the delicate art of recommending goods to possible purchasers? Only on the supposition that there is sufficient uniformity and stability in human nature to enable the measured rules of past experiment upon other men to hold of this man. Only so far as men

are really the same sort of stuff, or so far as any differences are measurable and calculable. Novelty alone can baffle applied science.

"If it were true, as some appear to think, that machinery and routine method were destined continually to absorb a larger and larger proportion of human work, and to direct a larger and larger share of human life, economic science with its quantitative calculus would acquire a continual increase of exactitude and a growing capacity for direction in the art of social conduct. But if, as seems more reasonable, progressive industry must serve to feed a richer liberty and novelty of individual and social life, the domain of quantitative calculus, though absolutely enlarging, may be relatively shrinking.

"We now seem able to get a more accurate understanding of what a scientific calculus can do for the assistance of the art of social welfare. It can do for that art what it can do for every other art, viz., furnish rules for the regular. So far as the stuff which constitutes or composes human welfare is uniform, i.e., so far as men are alike in their needs, and the material for the satisfaction of these needs is similar, it can supply rules of social economy which will have a high degree of validity. Though no two human organisms are identical in structure, all human organisms within a wide range of environment are so similar in the kinds of food, air and other material goods which they require, that it is sound 'social policy' to ignore their differences and to treat them as identical in the qualities of their demands and dissimilar only in the quantities. The practical economy of 'markets' stands upon this basis, and the

quantitative treatment finds its true justification in the utility of markets. There can be no market for the single or 'singular' consumer. A market, i.e., a practical instrument for measurement of economic wants, implies a standardization of the desires of buyers and sellers. Just so far as the members of an economic community are thus standardized in their preferences, are economic laws applicable. Thus, for the scientific interpretation of such a community, much depends upon the relative strength and importance of the standardizing and the individualizing forces. In a society where the so-called 'arts' of industry and of consumption have alike passed by imitation or tradition into firm conventions from which the least transgression is branded as an impiety or a wickedness, economic laws, based upon a sufficient study of the past and present, will enable one to predict the future with considerable accuracy. Primitive or backward communities are usually in this conservative condition. Moreover, as they advance and become economically progressive, it is observable that the most conservative and most calculable wants and activities are those relating to the satisfaction of the primary material needs. Hence it is evident that scientific predictions, based either upon general considerations of human nature or upon past measurements, will come nearest to fulfilment, according as they relate to the production and consumption of those articles most deeply embedded in the standard of living. Conveniences and comforts are more changeable than necessities, and luxuries most changeable of all. Now the marginal or least useful portion of those supplies, which in the earlier or

most useful increments satisfy some prime need, are often luxuries. The marginal portion of the wheat supply goes for cakes, or is thrown into the dust-bin as waste bread; the marginal oil goes into motor rides. Taking expenditure in general, we find the last ten per cent of every income most incalculable in its outlay, because it represents those purchases in which custom is weakest and individual taste or opportunity the strongest. In a word, it is precisely in those economic actions which express marginal preferences, the pivot of the mechanical calculus, that we find the maximum of instability and incalculability. For each of these nice marginal preferences proceeds directly from the changing nature of the organic personality. Whereas fifty per cent of a man's expenditure may express the common satisfaction of the fixed physical needs which custom has embedded in a standard of subsistence, thirty per cent the lighter but fairly stable comforts belonging to his class, the last twenty per cent is the part in which he expresses his individual character and his cravings for personal distinction and variety of enjoyment. * * *

"Neither as a deductive nor as an inductive science can Economics furnish accurate rules for calculating or directing future economic events. It can only prophesy within such limits as are set by the assumptions of the stability of human nature and of its environment. Its rules or 'laws' will best interpret and predict those economic actions which are most remote from the margin, i.e., those which are most conservative or regular. Marginal preferences will therefore be precisely those which it is precluded from interpreting or predicting by the

necessary defect of the intellectual instrument. * * *

"Economic science, though able to supply relevant and important evidence, can never solve conclusively any social-economic problem, even in that field of action where her authority is most strongly asserted. A given rise or fall of price can never produce the same effect upon demand twice running. Why? Because the desires and beliefs of the more unsettled section of buyers, the 'marginal' buyers, will have changed. Nor can this alteration in effect upon demand be calculated. Why not? Because the changes in desires and beliefs are organic qualitative changes. Observations of past price-movements and laws based upon them are not thereby rendered useless. For these organic changes will often be negligible so far as the bulk of the market is concerned. But they negate the possibilities of exact prediction, and often of approximate predictions on the margin.

"This is why the 'great' business man often prefers to act by intuition than by express calculation. He recognizes that, so far as the more delicate judgments are concerned, his 'feeling' of 'how things will go' is more trustworthy than any estimate. He does not act blindly. He feeds and fortifies his mind with facts and figures, until he is steeped in familiarity with the subject-matter. But he does not deliberately balance against one another these measured forces and commit himself to the resultant. For he is aware that the problem is not one of mere mechanics, a counting-house proposition, but one involving sympathy and imagination.

"The incalculable element consists of organic novelty,

the changes due to having to deal with matter not dead and homogeneous but living and organized. The citation of such instances is not designed to prove that monetary and other statistics are practically useless for the prediction and solution of social-economic problems. On the contrary, they are exceedingly useful. But the formal exactitude which they carry in their method can never be conveyed into the work they are required to assist in doing. The most abundant supply of the most accurate statistics, utilized by the most approved methods of economic science, can only afford results of a rude approximate validity, expressed in tendencies. The practical man in business, in politics, in every mode of social conduct, will supplement and correct the application of the scientific rule by the play of private judgment and intuition.”¹

History.—Men of the generation whose work is just about drawing to a close will tell you that when they studied history, they read about military and political affairs—about the exploits of Greek and Roman warriors and the intrigues of kings and statesmen. The middle ages included some account of the progress of religious thought, but in the modern periods history again relapsed into an account of military and political events. But history has an economic side which is of vastly more importance to the modern man of affairs. Military events are likely to be the consequences of political changes and of political strain and stress, and political changes and currents are likely to be caused and ordered by economic

¹For a further discussion of this subject, see Appendices C and D of *Marshall's Principles of Economics*.

evolution. A study of the economic self-sufficiency of Egypt will explain more of her peculiar history than will that of any account, however circumstantial, of the ambitions and doings of her kings and potentates. One cannot understand the American and French Revolutions unless one realizes the economic changes brought into the world by the steam engine and the printing press.

History for the business man should chiefly be concerned with the answer to the question, How has the swarm of humanity reacted to given economic changes? To answer this question he must study political events with a critical mind to find behind them the economic and sociological causes. Fortunately, the historian, in these latter days, has made the task comparatively easy by supplying historical studies which make the proper economic and sociological inquiries.¹

The advantages of historical study to the business man may be illustrated as follows. In the summer of 1917, the American Government fixed the price of steel, copper, wheat and several other necessities. It was found that speculators were beginning to corner the necessary commodities, and the question was submitted through various trade associations whether the Government should be urged to increase the number of articles on which it would fix prices. I happened to hear the discussion of this question in several meetings. Some were for price-fixing and others against it. Undoubtedly in each case, self-interest was the most important factor that led to an opinion one way or the other. But on the

¹ The serious student may begin with Bücher's *Industrial Evolution* and then read economic histories, so-called, of Europe, England, and America.

whole it seemed that the business men were somewhat panic-stricken at the outlook. Something had to be done. Just what ought to be done, nobody seemed to be prepared to say. In other words, there was no such cocksureness evident as generally characterizes politico-economic discussions. Perhaps the Government knew what was best. If they could fix the price of a few things they could fix the price of the rest. That seemed to be a general feeling amongst the anxious business men. The argument, of course, appears to be faulty to the scientific mind, for the difficulty in fixing prices really arises when the interactions of a complex business structure are artificially interfered with. One or two relationships may be brought under control, but each new element brought into the situation complicates it many, many times over.

But the question need not be settled wholly by *a priori* reasoning. History furnishes a precedent. The price-fixing of the fifteenth century, to be sure, was not exactly similar to that proposed by the Government at Washington, but it may throw some light on the situation. Economists generally believe that it was not very successful as practised in the Middle Ages. (See Ashley's *Economic History, Middle Ages*, p. 187 et seq. and Part II, p. 30 et seq.)

On the other hand, the limitations on the value of historical study are also evident in this illustration. Because they could not successfully fix prices five centuries ago is no conclusive reason why it cannot be done now. Rapidity of communication alone might make it feasible. As one author points out, they tried flying in the fifteenth

century and failed. But that was no reason why attempts at flying in the twentieth century should fail.

It is perhaps unfortunate for economic history as a science that its originator was Karl Marx, the "father" of modern socialism. Some students have rejected economic history as a science that can explain anything or can have any laws because Marx and other socialists used it to bulwark their socialistic theories. But Professor Seligman in his *The Economic Interpretation of History* has shown how unwise it is to condemn the science for the unwarranted use to which it was put by its originator.

What are the respective fields of economics, sociology and ethics?—The three social sciences—economics, sociology and ethics—lie so close to one another that trouble is sometimes encountered in drawing the line where one ends and the other begins. Economics seeks to study the ways and means whereby man adjusts himself to his environment in nature and to overcome the burden that nature lays on man in his struggle for existence. Sociology studies the struggle of man in his environment among men. What physiology and psychology do for the individual, sociology does for the group. Ethics deals with the struggle of man within himself to avoid doing what is by custom considered wrong.

Ethics.—We may begin with the study of ethics, since as it has been developed largely by philosophers and theologians through abstract reasoning and without much reference to the facts of everyday life, it does not contribute as much to the science of business as do economics or sociology.

A recent writer has summed up the field of business ethics as follows: "What are the moral obligations, the duties of the business man? Is it enough that he be honest and square in all his dealings? His reputation as an honest dealer, as a man who has never cheated a customer nor violated the law, is a valuable business asset. Has he, having earned his reputation, performed all his duties as a business man?"

"Business is a co-operative matter. Nothing much can be accomplished in it unless men work together for a common result. Now, men cannot be closely associated, working side by side, some subordinate to others, without that clashing of self-interest which gives rise to moral or ethical problems. It is evident that honesty cannot be regarded as the sole necessary virtue in business. Duty demands much more of a business man.

"Responsibility and duty are usually commensurate with power and authority, hence the head of a large business with many employees subject to his will carries upon his shoulders serious duties as well as responsibilities. He may ignore the moral imperative or command, but no civilized conscience will accept the excuse of Cain that he is not 'his brother's keeper.'

"Economics teaches that in general the rate of wages is fixed by the law of demand and supply. When an employee thinks that his particular wage 'ought' to be raised, has the employer done his full duty by that employee when he quotes to him the law of demand and supply? Or should he make clear to the employees just why he is not worth more and what he must do to make his services more valuable?"

"The laws of political economy are based on conditions as they exist, not on conditions that ought to be.

"This fact the enlightened business men of to-day are beginning to understand, and they are recognizing it as their duty to improve the conditions under which men work. The relations of employer to employee are more than economic. They are personal and ethical. The business man who thinks of his men as so many tools or machines to be worked to the utmost and then scrapped, is a shameless violator of the moral law. It is the duty of the employer to see that his men shall work under the best possible conditions, that their souls shall be properly replenished by variety of employment and by recreation, and that they shall have opportunity for mental growth.

"There is a sense in which it is absolutely true that an employer is the 'keeper of his employee.' The business man who denies it is ethically unsound.

"The man who does not co-operate with his competitors in their effort to raise standards, enforce laws and prevent unfair practices, is ethically recreant. A hundred years ago such co-operation was not practical, but today the means of rapid communications and publicity make possible what may be called solidarity or unity in any line of business or trade. That accounts for the great increase in the number of business associations during recent years, such as the National Credit Men's Association, the American Association of Public Accountants, the American Bankers' Association. One of the objects of these associations is the establishment and maintenance of codes of ethics or honor. A business man who neglects to support the association that has been organ-

ized for the good of his line of business neglects a real duty."¹

¹Johnson, *Business and the Man*, pp. 112 et seq.

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CHAPTER IV

THE SOCIAL SCIENCES

(Continued)

Sociology.—Sociology is the science which treats of man's behavior in groups. Sociology, like the other social sciences, does not concern itself with providing a means of modifying human conduct. It is content to explain human conduct. True, statesmen and social reformers may take the facts and theories worked out by sociologists as the basis for political or voluntary social action, but their plans for affecting human conduct are the results of their own judgment and not of any comprehensive plan of proper human conduct outlined by sociology. Indeed, as an eminent contemporary sociologist points out, actual control of human conduct has been most effectively exercised by political organization and religious teaching.¹

¹Giddings, in his *Lecture on Sociology*, published by Columbia University in the volume entitled *Lectures on Science, Philosophy and Art*, summarizes as follows the propositions made by Herbert Spencer, and apparently approves the system thus summarized as "a compact and logical" statement not only of Spencer's sociology but of the content of sociology generally. I have added to the summary a paragraph from Professor Giddings's *Lecture* to show that this latter statement is not wholly true.

"Societies are organisms, or they are super-organic aggregates.

"Between societies and environing bodies, as between other finite aggregates in nature, there is an equilibration of energy. There is equilibration between society and society, between one social group and another, between one social class and another.

"Equilibration between society and society, between societies and their environment, takes the form of a struggle for existence

among societies. Conflict becomes an habitual activity of society.

"In this struggle for existence fear of the living and of the dead arises. Fear of the living, supplementing conflict, becomes the root of political control. Fear of the dead becomes the root of religious control.

"Organized and directed by political and religious control, habitual conflict becomes militarism. Militarism moulds character and conduct and social organization into fitness for habitual warfare.

"Militarism combines small social groups into larger ones, these into larger and yet larger ones. It achieves social integration. This process widens the area within which an increasingly large proportion of the population is habitually at peace and industrially employed.

"Habitual peace and industry mould character, conduct and social organization into fitness for peaceful, friendly, sympathetic life.

"In the peaceful type of society coercion diminishes, spontaneity and individual initiative increase. Social organization becomes plastic, and individuals moving freely from place to place change their social relations without destroying social cohesion, the elements of which are sympathy and knowledge in place of primitive force.

"The change from militarism to industrialism depends upon the extent of the equilibration of energy between any given society and its neighboring societies, between the societies of any given race and those of other races, between society in general and its physical environment. Peaceful industrialism cannot fairly be established until the equilibrium of nations and of races is established.

"In society, as in other finite aggregates, the extent of differentiation and the total complexity of all the evolutionary processes depend upon the rate at which integration proceeds. The slower the rate the more complete and satisfactory is the evolution.

"Mr. Spencer organized sociology as a science, and he demonstrated principles which must always hold a central place in sociological theory, whatever its further development may be. But his analyses are by no means always exhaustive, and he raised many questions which he left unanswered.

"The most fundamental question that his exposition left open, and over which dispute soon arose, is that of the true nature of the social aggregate. Is it, strictly speaking, an organism, or is it more accurately described by Spencer's alternative phrase—a super-organic aggregate? A group of able writers, among whom Schaffle and Lilienfeld in Germany, and René Worms in France, have been most active, has strongly insisted that the typical society, consisting of individuals both dwelling and working together, is as truly an organism as is the animal or the vegetal body composed of cells and differentiated into mutually dependent tissues and organs. Pre-eminently fruitful work, however, has been done by investigators, who, conceiving society as a super-organic product, regard it as essentially a psychological phenomenon.

Some discussion has been indulged in by sociologists as to whether the science of sociology is an independent science or whether it is a complex of different parts of older social sciences.¹ But all sociologists, of course, are agreed that sociology as a science must draw heavily upon the other sciences—witness the fact, for example, that sociology is sometimes called social psychology or by some other such name. The fact is that biology, psychology, anthropology and economics are all inter-related.

What can sociology do for business?—Modern sociologists are making large demands at present on the science of statistics in order to formulate generalizations about human conduct. Claims are made for it, that with the aid of statistical method, sociology “promises to become in a rather high degree an exact science.” These claims are so interesting to the business man that we may quote them at length in the words of Professor Giddings:

“If there is a struggle for existence in which certain organisms perish, while others survive, it is plain that the survivors tend, under given environmental conditions, to become alike, since all must possess those structural peculiarities and those habits which give advantage over competitors. The more specific the conditions and fierce the struggle, the more surely is an individual marked for destruction if he varies greatly from the successful type or norm. Now most peculiarities of organic structure and activity admit of measuring—like height, of count-

¹Small, *General Sociology*, p. 40, holds the latter view, while Giddings, *The Principles of Sociology*, chap. 1, holds the former view.

ing—like the number of veins in a leaf. The measures or other numbers relating to thousands of individuals may be brought together in columns or tables. Their averages may be obtained, and the difference between each number and the average of all numbers of the same class may be found. Then, if the numbers, as shown by their deviations, have a wide dispersion from the average, we know that the individuals to which they relate have not for a long time been subjected to a relatively intense struggle for existence. It has been possible for them to vary within wide limits, and yet to survive. If, on the other hand, the numbers cluster closely about their average, we know that the individuals to which they refer have been subjected to a severe unifying pressure. They have ceased to vary because such as strayed from type lost their hold on life.

“Ingenious applications of this principle in connection with the curve of error, and other statistical devices, which have been developed by Sir Francis Galton, Professor Karl Pearson, and many others, have proved to be of inestimable value in biology, in psychology, and in anthropology. There is reason to believe that in sociology the results will presently be yet more satisfying, since in all statistical operations the possibilities of error diminish as the number of numerical items of any given class, and happening to be available for analysis, increases. Sociology will pre-eminently enjoy this advantage.

“The first attempt to make a statistical statement of the greatest possible number of sociological problems, and to indicate their statistical solutions, we owe to

Professor Mayo-Smith. It was possible when he wrote to give precision to statistical studies of population at one end of the series of social phenomena, to studies of organization and welfare at the other end. The intermediate and crucial problems of mental type and variability, of selective social choice, and of social pressure could not then be handled by statistical methods. It is becoming possible now to state and solve them quantitatively by employing the new methodical devices to which brief reference has been made. For example, Professor Benini, of Pavi, has demonstrated that it is a comparatively simple matter to measure a phenomenon seemingly so elusive as the consciousness of kind. Tabulating the Italian statistics of marriage, he ascertains how many bachelors would marry maidens, how many widowers would marry widows, how many men of a given age-class would marry women of the same age-class, how many men of a given nationality would marry women of the same nationality, how many Catholics would marry Catholics, how many men following a given occupation would marry women whose fathers followed the same occupation, if all of these combinations happened strictly by chance. Comparing the probable numbers with the actual selections, he obtains index numbers of selective choice or preference, thereby determining the exact intensity with which, as Empedocles remarked, 'like desires like.' This method is applicable to a wide range of social choices.

"By a somewhat different procedure it is possible to measure social pressure. In modern times social pressure is definitely distributed through provisions of stat-

ute law, and these admit of tabulations, from which index numbers we shall presently measure the varying degrees of social pressure as we now measure changes in the purchasing power of gold. It is hardly too much to say, therefore, that all of the chief theorems of sociology probably admit of quantitative statement, solution and correlation."

That these claims may be largely overestimated is the contention of a well-known English economist:

"The science and art of society have suffered so much from want of exact and measured information that it is only right and natural for immense importance to be attached to the collection of masses of ordered and measured social facts. If a sufficient number of trained investigators could be set to work to gather, measure, sift and tabulate the various orders of crude fact relating to the employment, wages, housing, expenditure, health, thrift, education, and other concrete conditions of the poorer grades of town and country dwellers, it seems as if a number of accurate and valid generalizations would emerge by clear induction upon which could be constructed an absolutely scientific treatment of poverty. Or, again, to take a narrower and more distinctively economic issue, that of the shorter working day. If a careful series of observations and experiments could be made in a number of representative businesses, as to the effect upon the size, cost and quality of output produced by given reductions in the hours of labor among various classes of workers, it might appear as if an accurately graded social economy of the working day could be attained by calculations.

"But though statesmen, philanthropists and reformers are more and more influenced in their judgments and policies by these measured facts, no safe mechanical rules for the guidance of their conduct in any social problem can be based upon them. The facts and figures which appear so hard and so reliable are often very soft and ineffective tools for the social practitioner. There are several defects in them regarded as instruments of social progress.

"It is hardly ever possible to prove causation by means of them. You may obtain the most exact statistics of housing conditions and of death-rates for the population of a group of towns, but you cannot prove to what extent 'back to back' houses affect infant mortality. No figures professing to measure the causal connection between drink and crime or insanity, income and birth-rate, or any other two social phenomena, possess the degree of validity completely in any organic or social problem, and you can never know how far you have failed to isolate them. You may, indeed, sufficiently obtain practical proof of organic causation, but you can seldom express this causation in terms of any quantitative accuracy. Still more is this true of psychological and social problems. A purely descriptive science of society may attain a considerable degree of quantitative accuracy, but the laws expressing the causal relations of these measured facts will always lack the certainty of operation and the measurability of action belonging to the laws of chemistry and physics.

"Now the chief facts with which the statesman and the social reformer are concerned in forming judgments

and policies are these laws of causal relation, and not the crude measured facts that constitute the raw material of statistics. This comparative inexactitude or lack of rigidity in the laws of social science constitutes the first difficulty in applying the science to the art of social conduct with the same amount of confidence with which the laws of physics and chemistry are applied to the mechanical arts. But another difficulty quite as grave as this want of rigidity in social facts is the instability of the standard. In all processes of physical measurement it is customary to make allowances for errors due to what is called 'the personal equation,' abnormalities of observation in the experimenter. But the standard of human valuation, the enlightened common sense of a community applied to interpret social phenomena in terms of 'utility' or 'welfare' will evidently be subject to much wider variations, and the interpretation of this standard by statesmen, or other individual agents of society, will be subject again to wide errors of personal bias.

"Illustrating from the economic sphere which is our concern, that specialization of industrial life which has made three-quarters of our population town-dwellers and is making our nation continually more dependent upon foreign supplies of food, will have a very different value set on it by the narrower nationalism which believes the interests and ambitions of nations to be irreconcilable, and by the wider political outlook which conceives the economic interdependence of nations as in itself desirable and as the best guarantee of national security. Or again, a difference of view or sentiment regarding the relative worth of the personal qualities of enterprise and self-

reliance on the one hand, of plodding industry and social-ity upon the other, must materially affect the values given to such phenomena as emigration, public provision against unemployment, co-partnership, taxation of high incomes or inheritances. Indeed it is quite manifest that with every difference of the range of sympathy and imagination the meaning which enlightened common sense will give to social welfare, and to every fact submitted to this test, will vary.”¹

Practical sociological work.—Sociological work, so-called by some business houses, has taken a very practical form² in what is known as maintenance work. The scope of this work has been defined by the Employers’ Welfare Department of the National Civic Federation in the following words:

“Welfare Work is the improving of working and living conditions of employees by employers; and is applicable to stores, factories, mines and railroads as well as public institutions, Federal, state and municipal.

“In promoting the work, it is recognized that the first essentials to the welfare of employees are steady work, an equitable wage and reasonable hours of labor; but that the employer has a further obligation.

“It is advocated that the beginning of all welfare work should be directed toward meeting the pressing necessities for the physical well-being of employees in their work places.

“Some of the subjects involved in Maintenance work are :

SANITARY WORK PLACES.—Systems for providing pure

¹Hobson, *Work and Wealth*, pp. 322-324.

²The Welfare work of the Colorado Fuel and Iron Company is conducted by its “Sociological Department.”

drinking water; for ventilation, including the cooling of superheated places, and devices for exhausting dust and removing gases; for lighting work places, and for safeguards against industrial accidents; wash rooms, with hot and cold water, towels and soap; shower baths for moulders and stationary firemen; emergency hospitals; locker rooms; seats for women; laundries for men's overalls or women's uniforms; the use of elevators for women; and luncheon rooms.

RECREATION.—“The social hall for dancing parties, concerts, theatricals, billiards, pool or bowling; the gymnasium, athletic field, roof garden, vacations and summer excursions for employees; and rest rooms or trainmen's rest houses.

EDUCATIONAL.—“Classes for apprentices; in cooking, dressmaking, millinery; first aid to the injured; night classes for technical training; kindergartens and libraries.

HOUSING.—“Homes rented or sold to employees, and boarding houses.

PROVIDENT FUNDS.—“(a) For wage earners' insurance, affecting governmental as well as employees in private enterprises, including: 1. Compensation for victims of industrial accidents; 2. Employers' voluntary sick, accident and death funds; 3. Retirement funds or old age pensions, and (b) Employers' plans for savings or lending money in times of stress.”

Value of maintenance work.—An employer recently told how a newspaper in his town carried for six weeks an advertisement for women workers inserted by a local factory. The factory's advertisement stated that the

women would get free lunches, would have recreation periods and would be entitled to the free use of gymnasium, baths and library. He added that he himself also advertised for women workers, his own advertisement appearing only once. This advertisement offered not welfare service but a dollar a week more wages than the other manufacturer offered. He got his employees in one day; the other manufacturer had to advertise for six weeks. Does welfare work pay? Concretely in this case it did not bring results. But it must be remembered that the exponents of maintenance work do not measure the value of their service in single instances any more than one would measure the value of feathers or straw as desirable things to lie upon by lying upon one feather or one straw.

Economics.—Perhaps of all the sciences that have been developed none is so important and interesting to the business man as the social science of business called economics. Organized society through its regularly constituted political divisions has been so great a factor in man's struggle with nature that the science has sometimes been called political economy. Indeed, from the fourteenth century down to the middle of the eighteenth century such economic discussion as there was concerned itself chiefly with the business conditions under which states could best prosper. Earlier economic discussion concerned itself with moral issues, such as whether it was right to charge interest. Modern economics, on the other hand, which by the way is usually stated as beginning with Adam Smith's publication of the *Wealth of Nations* in 1776, concerns itself with an explanation of business

phenomena as they affect society and as they affect the individual. It is perhaps fair to state that economics as a science is not static and that in the coming generation its chief concern will be the promotion of individual welfare through social regulation of business enterprises.

The three phases of socialization of industry.—Every generous-minded man will agree that the most desirable social organization is that which encourages the individual to overcome the forces of nature most effectively—that is, to contribute most toward production—and which distributes most evenly among all men the products of social efforts. To the objection that distribution should be made equitably instead of evenly—that is, that men should receive shares of the social income not evenly but in proportion to what they contribute—the answer can be offered that under proper social conditions the work of men would be apportioned evenly and their shares of income would be even and equitable. From this we can see how economics depends on the other sciences.

Starting with the proposition that each individual is placed in this world fortuitously in favorable or in unfavorable circumstances and that the world owes him not a living but the right to make a living and to enjoy it, we can see how sociology, psychology and a number of other sciences are going to be called into action to modify existing conditions. There is no panacea. Indeed, people are apt to confuse the means with the ends. No reform can be an end. Its true function must be to bring about the desirable ends of increased production and just distribution of the social income. Whether such a de-

sideratum can be achieved by individual effort and unregulated competition, or by governmentally regulated business or by business largely owned and operated by the Government is a question often erroneously asked. What should be inquired about is, Should the next step in social progress be made through one or the other of these means. At present it must be confessed that we have moved quite out of the *laissez faire* régime inaugurated in the middle of the eighteenth century. Indeed, we may be well on our way toward what is generally considered the third step in the socialization of industry—government ownership.

Early history of economic science.—As we have seen, economics as a separate science was really born with Adam Smith's *Wealth of Nations*. Smith was followed by several other English economists who made up what is now called the Classical School. The purpose of this school was to explain the laws of rent, wages and profits. Ricardo's theory of rent is still generally followed by economists. But his theory of wages has been discarded. He held that capital constituted a fund out of which wages could be paid and that nothing else could determine the amount of wages except the size of the fund and the number of wage-earners—i.e., the population, drawing upon the fund. This is the so-called "wages fund" theory. It explained, so the classical school generally held, the short-lived variations in wages. The longer tendencies in wage levels were explained by what has come to be known as the "iron law" of wages. This so-called law follows the doctrine of Malthus, that increase in population con-

stantly tends to out-pace increase in food supply. Hence, these economists believed that as wages increased, population was still further encouraged to increase rapidly until the increase was stopped by the limits fixed by the food supply. From all this it followed that wages would be kept down inexorably to an amount sufficient to meet the bare necessities of life. A dismal outlook indeed it presented to the laborer, and indeed it earned for economics the title, "The Dismal Science."

Relation of Classical School to practical life.—

The classical school of economists exerted an important influence on practical life. Their theories led to a full acceptance of the doctrine of *laissez faire*. Free competition thus got a strong start in the early part of the nineteenth century. "In the completed form to which it was brought by the work of Senior, the classical system had at least the merit of simplicity. The production and distribution of wealth seemed to be completely explained by half a dozen clean-cut propositions. From them seemed to follow by inexorable logic the principle that governmental interference with industrial relations must prove futile, even when not positively harmful."¹

Criticism of the Classical School.—Professor Seager has shown² that the classical system of economies was simultaneously attacked from five different sources. In the first place, many of the leaders changed some of their earlier opinions, and this gave ground for the moralists who insisted that the formulators of the "dismal science"

¹Lecture on Economics, by Henry Rogers Seager, in *Columbia University Lectures on Science, Philosophy and Art*.

²Cit. obit.

were "closet philosophers" and out of touch with real life. "Their desire for simplicity led them sometimes to argue as though all mankind had the same habits of mind as town men."¹ Thus they constructed "economic man" who frequently became more vivid in the mind under the name of Robinson Crusoe, but who in no sense could be said to embody all the attributes of mankind. (See discussion in previous chapter.)

The socialists accepted the doctrines of the classical school because they led to the conclusions, so Karl Marx held, that all incomes except wages are the result of legalized robbery. Thus while accepting classical theories, the socialists rejected the classical conclusions.

A new school of economists, called the German Historical School, attacked classical economics on the ground that they were not of universal application either in point of time or in point of place, and they drew upon their historical studies to back up their contentions. This form of reasoning was also sustained by the evolutionary doctrines of biological science—doctrines that were beginning in the middle of the first half of the nineteenth century to be generally understood and generally accepted.

Finally the classical school was directly attacked by the economists themselves.

Modern economics.—Modern economics has ceased to look upon business life as a simple affair. All of the influences that were brought to bear upon the economists to desert the teachings of the classical school have more or less tended to drive home the lesson that society is

¹ Marshall, *Principles of Economics*, Appendix B.

neither static nor simple.¹ "There is no fund, existing like a war chest, from which labor can be paid. It (wealth) is not an enormous stock of goods accumulated in the past and ever growing, which might be drawn on with no more evil consequences than leaving a gap. It is not like the treasure of a Greek temple, which passed, on conquest, from the service of the gods to the service of man, or like a landed estate which might be confiscated and divided among small holders. It is, in fact, a stream—a constant stream—not a reservoir. And, being so, it might dry up like other streams.

"The typical form of wealth today, in fact, is in the shape of Power—not stuff in the warehouse, but the mill which fills it.² Keep the mill running, and the warehouse will every day fill and evening empty. But let any of the many factors in the mill, that unit of production kept together by the most complex and delicate organization, start asunder—any factor, for the more perfect the organization, the smaller the thing which will wreck it—let there be any break in the process, I say, from a strike of the workers to a leak in the boiler—and what happens? Why, nothing goes into the warehouse. The stream of wealth has ceased to flow."³

¹"The inadequacy of the classical theories—if we except the wages-fund theory, the most serious, not to say vicious error of the old writers—came from their being only half-true rather than untrue." Seager, in *Columbia University Lectures*.

² Cf. Modern theory of matter.

³ Smart's *Second Thoughts of an Economist*, p. 46. Compare with this statement of wealth the definitions of capital and of income by the American economist, Professor Irving Fisher: "*A stock of wealth existing at a given instant of time is called capital; a flow of benefits from wealth through a period of time is called income.*" *Elementary Principles of Economics*, p. 38.

Political science and business.—If we had the space it would be interesting to develop at length the historical aspect of the relation of government to business. Many business men feel that anti-trust statutes, tax laws and the like burdens and limitations of government have culminated in the necessities of the war after a short growth dating back say to the Sherman Act of 1890 or perhaps three years earlier to the Interstate Commerce Act. The fact is that several centuries ago and during a period antedating that time, public administration in practice and in theory concerned itself much more with business than it does now. Indeed the relation between the form of political organization and the stage of economic evolution of a given territory has always been very intimate. "The idea that economic life has ever been a process mainly dependent on individual action—an idea based on the impression that it is concerned merely with methods of satisfying individual needs—is mistaken with regard to all stages of human civilization, and in some respects it is more mistaken the further we go back."¹

But it does remain true that State and business do draw near and again separate. One has but to recall the situation as it existed shortly after the Civil War, when the tariff and the currency were about the only important matters that business men had to consider as political elements affecting their businesses. Now, the hand of the State reaches down into every nook and corner of business.

The right of freedom of contract.—The chaos of the Middle Ages yielded freedom of contract as a gift no less

¹ Schmoller's *The Mercantile System*, p. 4.

precious than freedom of religion. But freedom of contract—the right to pursue any vocation that is not predatory and the right to acquire, hold and transmit property—has become an historical doctrine. It is not the place here to trace the assault on the doctrine and its capitulation to modern theories. Certain it is today that the individual's right to freedom of contract is wholly subordinate to society's wishes and whims. The guaranties of civil liberty that were first written in Magna Charta and reiterated in the United States Constitution have been rendered futile in the rise of what is known as the "police power."

History of the "police power."—The control of business through the exercise of what is known as the "police power" is so important, so all-pervading, and so contrary to what the mature business men of this day learned in their boyhood as the theory of civil rights, that we may explain it at some length.

The story begins with a Trinity Church burying ground in New York City. In 1823 a law was passed prohibiting burial within the city limits. Since the corporation, consequently, was deprived of the use of its property for the purpose for which it was intended, and since the State refused compensation, the Church claimed that its property had been confiscated. But the New York Court of Appeals held that, in the exercise of its "police power," the State for the protection of the health of the community could sweep aside the written guaranties of the Constitution.¹ A little later the United States Supreme Court adopted this doctrine, and it has since

¹ *Coates vs. Mayor of N. Y.*, 7 Cowen, 585.

done duty in numberless ways, including the enforcement of labor-hour laws, and more recently in the prohibition of what some people think is the very innocent occupation of selling and redeeming trading stamps.¹

Effect of war on social activities.—There can be no final solutions of social problems. As conditions change, the rules of social conduct must change. Each change that is wrought probably leaves some enduring effect on the social structure but this effect is gradually worn away by the changes resulting from newly arising conditions. In a period of stress—during a war, or locally during a flood or fire—social activities or group activities multiply. During the European War, transportation, production, consumption, and credit were all brought under government control. In districts subject to forest fires the proper official may place a shovel and ax in the hands of the citizen and compel him to work for a pittance. But influences working for socialization or individualism are more subtle than is here made to appear. The stalwart individualism of the British during the nineteenth century was undoubtedly a reaction from the excesses of the

¹ See *Rast vs. Van Beman and Lewis*, 240 U. S., p. 342 and *Tanner vs. Little*, 240 U. S., p. 369. In the trading stamp cases the doctrine of the police power has been pushed to the utmost. Up to the time when these cases were decided, the aggrieved business man who felt that his civil rights were being invaded by the State could bring the matter before the courts and ask them to decide whether or not his use of his property really was a detriment to the welfare of society. But in these cases the United States Supreme Court held that the question in each case is a matter of opinion and that the legislature's opinion is as good as the judiciary's, provided the opinion is based on facts and not on mere prophecy. See Brook Adams, *The Theory of Social Revolutions*. The objections raised by Mr. Adams to the position of the courts have been quite fully obviated by the Trading Stamp Cases.

French Revolution. And it is not unlikely that the Bolshevism of Russia will retard rather than promote the progress of social activity in America and elsewhere.

The future of Government relation to business.—

There is no denying that the pendulum is still swinging away from individualism. How long progress will continue in that direction before it is felt that the next step should be taken toward individualism it is difficult to say. Progress, however, will probably be best promoted by synchronizing the two movements, just as the circular motion induced by the sliding back and forth of the piston rod is synchronized and reconciled with the forward movement of the steam locomotive.¹

The Government as a promoter of business.—Many people think of the Government as an organization whose whole purpose is to protect society by constantly saying "Thou shalt not." Inspection laws, labor laws, taxation and the like do emphasize the restraining power of government. But the promotion of business is also the business of government. One has but to read a list of the various bureaus in the executive departments of the Federal Government to realize how much is done to promote business. Indeed the Post Office, the Interior, the Agriculture, the Commerce and the Labor Departments are devoted almost entirely to that end. To these may be added the Federal Reserve Board, the United States Shipping Board, the Smithsonian Institution, the Pan-American Union and the Library of Congress. Copyright and trade-mark and patent laws all evidence the Government's

¹For an opposing view see Emile Fagnat's *The Cult of Incompetence*.

interest in business promotion.* If there is any criticism to be made, it should be directed against the people who do not know of or do not use the facilities which the Government—Federal, State and Municipal—offers.

Business men and the law.—While it is probably impossible to make an exact calculation, we may be safe in saying that the losses due to ignorance of the law, disregard of the law or carelessness in applying it, are greater annually than the combined annual losses due to fire, flood, speculation and fraud. Surely every business man who comes in contact daily with other members of society should have more than a superficial knowledge of the laws governing his relations to them.

Substantive and adjective law.—Much of the business man's contempt for the law is misdirected. The law itself is a logical science that must command the respect if not the admiration of the thinking man. Frail human beings administer it, and therein lies its weakness.

Law may be divided first into criminal and civil law. Criminal law governs the relations of the individual with the State; and civil law the relations of the individual with other individuals.

Criminal law in many ways affects business; there are the laws against business fraud, against the declaration of dividends from capital, against doing business under a fictitious name without filing a certificate, and scores of other laws.

Civil law is divided into substantive and adjective law. Substantive law is that in which the business man is most interested. It deals with the primary rights, while adject-

tive law—of interest chiefly to lawyers—prescribes how those rights may be enforced in the courts. Substantive law is divided into three main classes: the law of contracts, the law of property and the law of torts. Property rights are not simple. There may be dozens of contemporary and dozens of sequential property rights in a given piece of wealth. How these rights are created, maintained and transmitted in life and at death is the concern of the law of property.

The law of contracts deals not only with such general questions as the creation of contracts, the parties to the contract, the performance of the contract and the remedies for breach, but also with such special forms of contract as bailments, insurance, sales, guarantees, bills and notes, and the whole field of business associations.

Torts are wrongs committed by a person against the property or person of another, such as slander and libel, negligence, trespass, and conversion of property.

Law and equity; common law and statute law.—Several further elemental facts about jurisprudence must engage our attention. Business men are apt to pay too little attention to the making of laws. They overlook the importance of public opinion in forming the laws. The tremendous influence of public opinion will be evident to anyone who will recall the gasolineless Sundays that prevailed during the European War, though no legislative enactment had been passed. Public opinion alone kept the automobiles off the road. But laws not backed up by public opinion were unavailing in keeping the baseball players off the diamonds on Sunday or in keeping the doors of the "movie" theatres closed.

Public opinion becomes crystallized in laws or statutes. These may, as we saw in our discussion of the "police power," affect every activity of life. The common law, based on the early decisions of the courts, deals with ordinary affairs such as contracts, but the statutes are passed by the legislature to amend the common law whenever the latter does not meet the conditions of the time as the public opinion of that time determines they should be met.

Historically and fundamentally there is a great difference between law and equity. The old law courts were governed by precedent wherever there was a precedent to fit a given case. The only remedy the law courts could give was money damages. But there were cases where money could not mend a wrong. Prevention alone could solve the difficulty. No money damages could repair, for example, the damage done to decorative trees, centuries old, which were being destroyed by the noxious fumes from a factory. In such a case the owner would go to the King and ask to have the nuisance abated. The King might directly command the owner of the factory to desist. It was a personal order or decree which must be obeyed on pain of punishment by imprisonment or otherwise. Afterward the King became too busy to attend to such matters and referred them to the Lord Chancellor of the Realm, the "Keeper of the King's Conscience." Since the King's conscience was the fountain-head of all justice, the Chancellor was not limited to granting money damages. He, like the King, could order the person to act or not to act. Thus grew up the chancery or equity courts that act *in personam*, that grant

injunctions, order specific performance of contracts and issue decrees of divorce, appoint receivers and wind up insolvent estates involving an accounting.

Experts.—We have now made a brief survey of the sciences about which the business man should have some knowledge. How far should he go in the pursuit of the knowledge? We recall the old saying that certain business situations are so difficult that an unprejudiced outsider alone can deal with them. Moreover, the expert does justify his existence by knowing more about a limited field than the average man in his short lifetime can hope to know if he aspires to the same degree of knowledge and skill in all branches.

The difficulty that has brought experts into disrepute has been the inexpertness of many poseurs—men who through inaptitude were not fitted to master a limited field, who had not the proper training and were too scatter-brained to acquire it. Not every person who has limited interests is an expert, nor is a person an expert because he has the “nerve” to charge an expert’s fee.

Moreover, a person without wide experience cannot be an expert, for expertness entails much study of the relation of a given field of study to matters which at first sight seem to be quite unrelated. An efficiency expert—so self-styled—who knows all about machines and records may still be a child in swaddling clothes as far as his understanding of human nature is concerned. He is but a student and has no right to try to apply his learning.

What experts can do for the business man should be the constant study of every serious-minded business man. To this end, every man of affairs should keep abreast of

the times as progress is made in the various sciences that we have included in our so-called "environment of business."

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CHAPTER V

THE SCIENTIFIC METHOD

What is meant by "the scientific method."—If business has its science, business men must be interested in scientific method. Science is classified knowledge, and scientific method consists of the production of general laws from classified facts and the deduction of consequences from those laws. "The man who classifies facts of any kind whatever, who sees their mutual relation and describes their sequences, is applying the scientific method and is a man of science. The facts may belong to the past history of mankind, to the social statistics of our great cities, to the atmosphere of the most distant stars, to the digestive organs of a worm, or to the life of a scarcely visible bacillus. It is not facts themselves which make science, but the method by which they are dealt with."¹

The man of science, then, observes facts, analyzes and arranges them, makes an inference as to their meaning and then proceeds to verify this inference. Let us look at these steps separately especially in the light of their application to the science of business.

The collection of facts.—Facts may be collected in various ways. First there is direct observation. Accurate observation is the first step in scientific method, although the scientist may skip this step by using the recorded

¹ Karl Pearson's *The Grammar of Science*, p. 12.

observations of other persons. In any event it is indispensable that the observations whenever made and by whomever made be accurate. Judges and lawyers, who listen to the contradictory recitals of happenings given by disinterested witnesses, know how apt the human mind is to err in making observations. These mistakes may be due to poor observation or to a total overlooking of an object and may result in *omission* of elements, *addition* of elements, or *wrong relation of the parts in a whole*.¹

In business, one of the most frequent errors of observation is that of omission. This is due to the fact that the objects to be observed are not simple and are not readily separable from the other and surrounding elements. An observer holding a stop-watch while a workman performs a task may not observe that the machine by which the mechanic is working is being operated by a tight belt while all the other belts in the factory are somewhat loose. A time study made in that way would be of little value. When Harriman in 1901 tried to wrest the control of the Northern Pacific from James J. Hill by buying a majority of the stock on the open market, he overlooked the fact that some of the stock he was buying was redeemable preferred, and that Hill—who controlled the board of directors and had a majority of the common stock—could turn the preferred stock into money and thus rob it of its voting power. When plans of business action are being formulated, care must be exercised to make sure that all essential facts have been observed and are included in the subsequent determination of a policy.

Prejudice, as we shall see, frequently leads people to

¹ Jones, *Logic, Inductive and Deductive*, pp. 18-19.

the error of seeing what really is not there. The old-time promoter's crimes were partly to be laid at the door of avarice perhaps, but partly also at the door of distorted observation caused by self interest. A simple boring for a mine, if it showed metal, was considered sufficient, and the possibility of its being misleading as to the true quantity of metal was never considered. Fear, too, may cause an exaggerated observation. Observation, it must be remembered, is a purely intellectual, unemotional process. One could hardly expect a frightened barbarian to make an accurate observation of a steam locomotive seen for the first time.

A very frequent source of mal-observation in business is the inability to see things in their proper relation. Psychologists are familiar with the laws of illusion. For example, a silk high hat looks considerably higher than its width. The dimensions are usually equal.¹ Parts may be so arranged as to give an erroneous impression of any single part. It is said, for example, that the general massiveness of the head and chest of Daniel Webster led many people to overestimate his height; indeed his true height was always overestimated till he was measured for his coffin.

Causes of mal-observation.—Correct observation of facts is so important in business that we may examine some of the chief causes of incorrect observation with a view to putting the earnest student on guard. (a) In the first place, surrounding conditions may not be propitious for a correct observation. On an unusually clear day Martha's Vineyard seems very near to the observer

¹ See Seashore's *Psychology in Daily Life*, chap. vi.

who stands on the shore of Cape Cod, though on an ordinary day it seems a full fifteen miles off. The pilot must take atmospheric conditions into account in making observations that come through the sense of sight or sound.¹

The expert (lay-out man) of the advertising agency recognizes this cause of error when he makes the red of a car card seem more red by surrounding it with green. (b) The observer may have his senses impaired by physiological infirmity. The temporary infirmities—such, for example, as arise from fatigue—are the most dangerous, since they may go unrecognized, no allowance, consequently, being made for them. Attention is given, however, to recognized infirmities, and the observation, therefore, in such a case, may be made more accurately than in the case of a supposedly fit observer who is unconscious of the fact that his senses are impaired. It is said, for example, that the greatest number of accidents do not happen in factories at the very end of the day, for at that time the operators have had their attention drawn to their physical condition and are more attentive to their bodily welfare.² On the whole, however, unusual physiological conditions are a handicap and interfere with accurate observation. (c) We have mentioned the physical and physiological impediments that may interfere with

¹ For the distinction between sensation and perception or observation, see James, *Psychology*, chap. xvii. Note:—"A careful perception made with a purpose is called an *observation*." Jones, *Logic*, p. 22.

² Hollingsworth & Poffenberger, *Applied Psychology*, p. 218. For an extended study of the "incidence of accidents," see *Brief for Defendant in Error*, in *Bunting vs. State of Oregon*, reprinted by National Consumers' League, pp. 360-391. For the effects of alcohol and tobacco on the brain and nervous system, see Fisher and Fisk's *How to Live*, pp. 237-239, 263-268.

accurate observation. The psychological sources of error, however, are more important, because they are more frequently present. The more important of these sources of error we shall enumerate and explain separately.

(1) Habit. There is always a tendency to see things as we have seen them. Conversely, if we cannot see things as we have been in the habit of seeing them, they seem grotesque. You might, for example, try the simple experiment suggested by James (*Psychology*, vol. II., p. 81), of lying on your back and looking up at a person talking who stands behind you. The lower lip is seen in such an unusual way that it "seems animated by the most extraordinary and unnatural mobility." It is precisely for this reason that the so-called expert makes claim for ability to see things in a business that the proprietor or manager, habituated to its methods, cannot clearly recognize.

To habit, probably are to be attributed many of the obstacles that are put in the way of business progress. The survival of the idea of craft organization of labor, preventing as it does the grouping of workers in a scientific way—on a basis of efficiency and ability—is one of the obstacles to the growth of scientific management.

(2) Prejudice. We tend to observe what we expect or hope to see. Prejudice varies all the way from mere neglect or carelessness to a positive though perhaps somewhat unconscious determination to slight the facts. To this psychological infirmity must be attributed, for example, the charter of Aaron Burr's Manhattan Company.

¹ See Thompson's *The Theory and Practice of Scientific Management*, pp. 150-151.

The legislature was expecting a bill for the establishment of a water company; they did not observe a clause, sandwiched in, giving the company the right to do a banking business, under which right the Bank of the Manhattan Company is still doing business in New York City. Prejudice lies at the root of many business problems. It is natural, perhaps, that a person who has been handling a business for a long time should believe he knows all about it. This prejudice in favor of self is a frequent cause of non-observation.

3. Lack of attention or misplaced attention. The cheating huckster for example, trades on this infirmity when he displays a sign, "**Malaga Grapes 5 cents a $\frac{1}{2}$ -pound.**" The average person asks for a pound and then gets change for a ten-cent purchase. His attention is centered on the "five cents" and on the "pound," and he fails to see the " $\frac{1}{2}$."

4. Lack of training. The man about the street may look at a dog for five minutes and then be able to tell little more about it than its breed, general size and color. The dog-fancier after a moment's glance could tell many details. He has trained himself to observe the shape of the head, the set of the ears, the shape of the legs, the stance, and the angle of the tail. Dry-goods houses employ expert buyers in their several departments—people who are trained to observe details that the average person might overlook. Here again the expert with much experience in a limited field has advantage over the slightly-experienced general practitioner.

5. Abnormal psychological conditions. Seashore, in his *Psychology of Every-day Life*, tells this story (p.

185): "In demonstrating an illusion in sight to a class one day, the lecturer said: 'You observe that this line, which is actually straight, looks bent.' All the class except one young man, verified the observation. He said, 'It looks straight to me.' Then presenting the complementary phase of the illusion, the lecturer said: 'You observe that this line, which is actually bent, looks straight.' All agreed except the same young man. He said, 'That line looks bent to me.' The lecturer thereupon made closer observation and found that the young man was drunk, and reported him to the president, with the result that he was expelled from the university within two hours from the time that he proved refractory to a normal illusion."¹

Testing observations.—The trained scientist holds every observation "in suspicion until tested." Here, perhaps, is the greatest difficulty of the business scientist or the social scientist. He cannot test his observations with the same facility as does the physicist or the chemist. The marketing man of a business prepares a selling letter and sends it to 5,000 people in different parts of the country. He may get a 3 or 4 per cent return, and on the strength of this mail out 100,000 additional letters. The second

¹ I am reminded by this story of the experience I am told young men have had who have applied for admission to the aviation corps. They are strapped in a chair which is whirled around. When the chair is stopped the candidate involuntarily lists to one side. He usually fears that his chances are gone and makes a desperate attempt to put himself on "even keel," when he is assured that his list to one side is all that saves him. It is a normal tendency and is of great service in making the candidate an efficient flier. Men who do not "list" are rejected. This, to be sure, has nothing to do with observation, but does illustrate psychological and physiological infirmities that may interfere with the normal working of the sensory organs through which observations are made.

batch, however, may be delivered to readers on a rainy day, while the test letter, perhaps, was received on a clear day. The return on the 100,000 issue may be much more or less than on the first issue, for the correspondents may be in a different mood on account of the weather. Or, perhaps, some important news in the morning paper may put people in a different frame of mind. Or, perhaps, the second batch may be delivered on Monday—with a day and a half's accumulation of other mail—whereas the earlier issue may have been delivered on Wednesday or Thursday.

The simplest way to test an observation is by experiment; but experiment, to be worth anything, must be performed under constant or controlled conditions. In chemistry, for example, we can experiment successfully, for we can isolate our facts, by placing our chemicals in a test tube.

So important is this matter to the scientist who studies business that we may be excused for explaining the situation at length. If this inherent difficulty of the science of business—the inability of the practitioner to carry on scientific experiments—were understood by the so-called practical man, a great deal of his complaint about “theory” and “theorists” would be dissolved and he probably would be more appreciative of the “theorist’s” efforts.

The method of the physicist or the chemist working in his laboratory may be described in the words of Lotze¹: “Whenever we can, by our own agency, influence the object we are investigating, we can remedy this want

¹ Lotze's *Logic*, Bk. II, chap. vii, 260, quoted in the text from Jones's *Logic*, p. 25.

(insufficient observation) by experiment. We can institute at will a certain group of conditions C, and so compel the causes which are really at work to respond with an effect E, which would otherwise perhaps have never come within the domain of our senses. By varying at will the quantity and composition of that C we can bring about in E a series of changes in quantity and kind, which were still less likely to offer themselves unsolicited to our observation. Again, we can break up C into component parts, and in each experiment allow but one of these, or a definitely assigned group of several of them to take effect, at the same time cutting off the rest from action. The constituent elements of the result E admit of being separated in the same way, so that we learn which of them depends upon which element of the compound C. Thus experiment is the practical means by which we furnish ourselves with observations in such number and involving such mutual differences and affinities as are requisite to eliminate what is unessential in them."

The conditions under which experiments may be conducted, described in the above paragraph, are ideal. When you introduce the human element, you immediately eliminate the possibility of having constant working conditions.

God's most dreaded instrument,
In working out a pure intent,
Is MAN.

The modern social economist recognizes this situation. "The facts of human nature which are of the greatest importance to the social psychologist are just those to which laboratory methods are least applicable. It is

almost impossible to arrange a series of identical experiments to illustrate the working of patriotism or ambition or the property instinct or artistic and intellectual creativeness. In such matters the social psychologist must be content with the instances which arise in ordinary life, and must examine them by the older methods of introspection, personal evidence, and analogy.”¹

Difficulties of experimenting with complex facts.—Before proceeding to a more detailed discussion of this one illusive element that goes into the business scientist’s test tube, we must pause to consider another difficulty in the way of accurate observation and scientific experimentation, namely, the complexity of business situations. This complexity of even the most trivial problems is sufficient to thwart the efforts of the very best trained and most competent reasoners. To appreciate how almost hopeless the problem is, we must draw a lesson from one of the most exact of sciences, astronomy. “In its most general form, the ‘problem of three bodies’ is insoluble by any mathematical processes that have yet been invented; in other words, if only the three bodies, the sun, the moon, and the earth existed, it would still be impossible to obtain a solution of the problem—what will be the motions of these three bodies under the influence of their mutual attractions.”² If the difficulty is so great here—not insuperable, since mathematics is helped out by other sciences—what must the task of the business scientist be who has a multitude of forces and facts to bring together for observation?

It is for this reason as well as for the reason that one

¹ Graham Wallas, *The Great Society*, p. 30.

² Hink’s *Astronomy*, pp. 125-126 (Home University Library).

of the facts itself—man—is complex, that economists have such difficulty in working out a social science of business. “If a science at all (political economy), must be a mathematical science, because it deals with quantities of commodities. But as soon as we attempt to draw out the equations expressing the laws of demand and supply, we discover that they have a complexity entirely surpassing our power of mathematical treatment. We may lay down the general form of equations, expressing the demand and supply for two or three commodities, among two or three trading bodies, but all the functions involved are so complicated in character that there is not much fear of scientific method making rapid progress in this direction.”¹

Importance of the human element in business.—
The old economists tried to solve the problems of economics by reasoning about a “standard” man on a lonely isle—old Robinson Crusoe was constantly being made to do duty for this purpose. Alas, there is no standard man. Nor can there be. I happened to come upon a leading farm journal the other day and in it I read a bit of advice to farmers on how to slaughter hogs and what to do with their decapitated heads. I could not restrain a smile at the thought of what a different individual I should be if a part of my work consisted of slicing off ears, gouging out eyes, slitting up jaws and dislocating hogs’ brains. Mind you, I claim no superiority—but I do feel that I probably should have a different outlook on everything in life if I had had these experiences. The myriad influences of heritage and environment that make

¹ Jevons, *The Principles of Science*, pp. 759-60.

up man can be combined in an infinite number of ways, and hence we have an infinite variety of men. There is no Robinson Crusoe. Each man has his own Robinson Crusoe who differs from his neighbor's Crusoe as he himself differs from his neighbor.

Unfortunately for the business scientist, this most elusive element, man, is the most important element that must go into his test tube of experimentation. The chain of reasoning on any subject—be it selling policy, production policy, or socialism—that leaves man out of the reckoning is worthless. I am reminded of the importance given to this subject by the late Colonel Maude in his article on "Strategy" in the *Encyclopedia Britannica*. He says: "In conclusion, the man who would fit himself for the highest commands in war, or even for the criticism of those who exercise them, must never for one moment forget that the momentary spirit of the mass he directs is the fundamental condition of the success of every movement. Just as there is no movement so simple that its success may not be jeopardized by ill-will and despondency in execution, there is hardly any limit to what willing men can achieve, and it has been this power of evoking in their commands the spirit of blind trust and confidence that places men like Cromwell, Marlborough, Frederick and Napoleon almost beyond reproach. By the side of this power the technical knowledge and ingenuity displayed in their several undertakings appear quite trivial; probably the same ideas have occurred to thousands of quite mediocre men, but never put into execution, because they could not count on the whole-souled devotion of their men to execute them."

In any form of experimentation in business, then, the one most important element to be observed generally is the human element. It goes without saying that in such experimentation the men who make up the human element must be living in a not unusual atmosphere. A chemist would not expect to get normal results in his experiments if he conducted them in an icebox or at the north pole. Unfortunately some business investigators surround themselves with a frigid atmosphere and then expect their experiments to show normal results. One of the leading exponents of scientific management for example, admits this shortcoming of some of the workers in his field by reprinting this story from a general criticism of efficiency men: "A number of years ago one of the now leading efficiency engineers was engaged in a large industrial plant to introduce a piece-work system. For two years he labored; stop-watch in hand, he timed the various operations and tabulated the results. His attitude toward the workmen was impersonal. He was a scientist (?)¹ in his laboratory. He was a man apart. The men around him recognized him as such. Lacking their confidence, co-operation was impossible. When he appeared in the shop and began his observations, machines would often be slowed down, with loss of output, or speeded up, with damage to tools. Every device known to the various trades was resorted to to block him at each turn. The result was that after two years of effort the establishment of a satisfactory piece-work system was as far from realization as it had been when the task was started. Then a practical man was called in. He acquainted him-

¹ The interrogation point is in the original.

self with the machines and their capacity. He mingled with the men and gained their confidence. He explained that the object in view was two-fold, to increase the output at a reduced cost per unit to the company, and at the same time to enable the men to earn more. Within six months he had accomplished results that the efficiency man had spent two years in an effort to secure. Why? Because he appreciated the importance of the man element."¹

Progress of experimentation in business.—The business scientist need not despair because his task is more difficult than that of men working in the fields of the natural or physical sciences. Let him, simply, first have a realizing sense of the inherent difficulties of his undertaking and then let him make no claims for his work be-

¹ Thompson's *Scientific Management*, p. 619. That this criticism does not apply to the more proficient and capable efficiency engineers will be seen from the following account of their work by one of the best known, H. L. Gantt: "Although slide rules for determining how to do machine work and instruction cards for directing the workmen had been in use since May, 1899, the monthly output of the shop (of the Bethlehem Steel Company) during the year from March 1, 1899 to March 1, 1901, had been but little more than the monthly average for the five years preceding.

"Up to this time we had devoted our efforts principally to the study of what could be done, and had done but little to cause the workmen to co-operate with us. This record shows that we had not in any measurable degree secured their co-operation. In other words, we had much knowledge, but were unable to get any substantial benefit from it because the men would not help. On March 11, 1901, I suggested that we pay a bonus of 50 cents to each workman who did in any day all the work called for in his instruction cards. * * * We must secure the confidence and co-operation of the workman by assuring him equitable compensation. * * * The task with a reward for its accomplishment produces this interest (which saves the workman from forcing himself to do the work) and holds the attention, with the invariable results of more work, better work and better satisfied workers." (From a paper read by H. L. Gantt, at the Eleventh Annual Meeting of the National Civic Federation, January 12-14, 1911.)

yond the bounds of possible accomplishment. The fact is that, with all its difficulties, experimentation is making some progress in the science of business. In spite of all the gibes against the efficiency man, he has found his place in the sun and has had made notable progress in the installation of his system in industrials, railroads and public institutions.

And the publications of certain psychologists show that not only are experiments with man in industry and commerce being conducted in a scientific spirit, but that they are yielding results. What is the best copy for advertisements; what is the best advertising position on the double page of a magazine; what is the effect of fatigue on the operator; what are the least fatiguing ways of performing a given operation; what is the effect of fatigue on color sense; what type is most easy to read and at the same time most economical of space?—these are but a few of the problems that are being solved by experiment carried on by making observation of the effects of variously combined elements. The field for the scientist in business is limitless, even if the results cannot always be definite.¹

Moreover, it is probably true that some of the difficulties already mentioned are tending to disappear while our ability to handle the other difficulties is increasing. The elimination of human labor in many industrial processes makes possible standardization in production, and

¹ See Thompson's *The Theory and Practice of Scientific Management*, pp. 36-75.

² See Münsterberg's *Psychology and Industrial Efficiency*; Hollingsworth and Poffenberger's *Applied Psychology*; Hollingsworth's *Advertising and Selling*, and several of the essays in Copeland's *Business Statistics*.

the development of the esthetic tastes of the masses will result in making possible the simplification of marketing processes. That a long way has still to be travelled to accomplish much in the latter direction is evident to any one who sees the so-called "funny pages" in our Sunday papers or who visits the lamp or picture departments of an installment furniture house.

Memory.—In the previous paragraphs we discussed the collection of facts through the direct means of observation. Let us now turn our attention to various indirect means of getting knowledge. As I write this book, part of my raw material is obtained through search and research into the *testimony* of others, part from the *memory* of past research, and part from the *memory* of past *observation*.

In modern business, of course, memory is largely supplemented by records. It is perhaps not too much to say that modern large-scale production and modern accounting go hand in hand. One has supported and received support from the other. Of this we shall say more later. But at present we may venture a few words on the subject of the memory. A memory test is a very fair test of ability of an individual, since he who has a poor memory is apt to be a poor or heedless observer and an indifferently poor thinker. The way to improve the memory is by improving the method of noticing things and by increasing the amount of thinking with which the noticing is mixed up. One man starts out to learn a selling-talk; he tries, parrot-fashion, to memorize sentence after sentence. He may consume days in the process and then never be quite sure of himself. An-

other man will begin by analyzing his talk into its main points. Each point will then be studied in a logical way—sentences as such will come last. Such a man will “get his talk down pat” in a surprisingly short time.¹ One way to improve the memory is to describe as carefully as possible the things we observe or experience, and to discuss them. Conservation not only teaches us new things but helps us to remember those we already know.² “Growth through self-expression” is a prime law of mental efficiency.

Testimony.—Two methods of acquiring knowledge thus far described are observation and the use of the memory. A third method is testimony. Fortunately for the business man, testimony is becoming an ever-increasingly abundant source of business information. Ten years ago, there were few books indeed on business. Economic theory occupied the attention of students much more than the facts of business. Where then one or two books appeared, now they are being written and published by the hundreds. Some of the more important of these publications are listed in the bibliographies at the end of each chapter of this book.

Importance of reading by pages.—The literature of business is becoming so vast that it behooves the average man to train himself to read rapidly. Men like Macaulay and Roosevelt, who seem to have limitless interests and

¹ For a similar experience in memorizing sermons, see James, *Psychology*, p. 667.

² Teachers and students in so-called “Business Colleges” will be interested in the commendation of their work in this respect by Professor Seashore in his *Psychology in Daily Life*, p. 81. Professor Seashore’s chapter on “Serviceable Memory,” *Ibid.*, chap. 11, is delightful reading and contains perhaps all that can be said to the average man on the subject.

limitless information, have gotten their facts by reading a page at a time and turning over the pages as one would turn them leisurely in a family album of unknown and unstriking photographs. The novice must not think this a step to be taken at once. Quick reading follows from previous slow thinking. All of our new experiences are limited by our old experiences. We tack them on to what already has happened. The student, then, should begin slowly by arranging his information, classifying and labelling it, and then storing it away. Afterward, when he begins to read faster, he will find the pigeon-holes of his mind ready to receive the new information. Pages of a book at a time can then be enveloped with the eye, for the contents will merely drop into the appropriate compartments of the mind, and only the new will have to be accommodated. Macaulay read the Bible through at the age of four; Roosevelt at the age of twenty-two had written one of the best histories of a short period of this country that has been produced. These men began early, with much reading and clear thinking, to provide the receptacles for new mental experiences.

Testimony in modern business education.—Modern education uses both observation and testimony as a means of conveying useful information. This is true now of business education as well as of general or other technical education. Nowadays, the medical student performs his chemical laboratory experiments and dissects cadavers. But he does all this in a school where the greater part of his education is acquired from books and lectures. His education now is largely a matter of testimony. In days gone by, most of his education came as a result of scat-

tered experiences. As late as 1721 there was but one physician in Boston whose training had been of the school rather than in the apprenticeship system. The same condition existed in the legal profession. It was not until the opening of the nineteenth century that the young lawyer regularly got his information from the organized testimony furnished through the teaching of law schools. It is said that Patrick Henry was admitted to the bar of Virginia on the motion of Thomas Jefferson after only two or three weeks of study. The rest of his legal education was obtained evidently by experimenting at the expense of his clients.

The business student, of course, observes as well as reads. Today, however, so vast is the amount of information that must be acquired, that testimony—as compared with direct observation—has become of relatively greater importance than it was under the old apprenticeship method of business education. “In the good old days, the artisan learned his craft or trade by working alongside of the master and absorbing not only the master’s handicraft, but all his worldly wisdom, his ethical and religious standards. It is impossible for a workman to learn his trade or occupation in that way today, and, thank God, we have begun to realize that the task heretofore performed by the master-workman who was a workman himself, must be transferred to the schools.”¹

Making inferences.—After facts have been collected, analyzed and classified, the next step is to find the laws governing the facts. This is done by formulating a ten-

¹ Prof. John H. Gray, “Professional Accountancy and Education,” *Journal of Accountancy*, vol. II, p. 123.

tative law, or inference, or hypothesis, and then verifying it. The formulation of such laws and their verification complete the scientific inductive process. Perhaps "practical" men will not be interested in how the laws are made, but will be interested only in whether they are true and how they can be used. This is a not unfair attitude for the business man to take who is actually well along with the conduct of his business. He will let the discovery of the laws go to experts. But this attitude should not cause him to despise or neglect the work of the experts. Indeed he should (and the more successful do) encourage experts to use their scientific methods for the advancement of his ends.¹ Dozens of institutions, such

¹ The crux of the whole matter is, we believe, as is pointed out in the text, that induction is the proper domain of the expert, the university man and the research specialist; whereas the business man's domain is that of deduction or the use of the laws of business discovered by the specialist. Professor Jones has developed the idea at length in his *Business Administration*. "The scientific point of view is to follow the lead of the subject-matter. This means that when the aim of any piece of work is complete knowledge of a given subject, it is not intelligent to complicate the problem by adding the question of the use to which the knowledge is to be put after it is attained. This is simply following the rule of having a properly circumscribed aim—a practice the value of which all administrators understand.

"On the other hand, the practical problem begins by setting a specific goal, such as a desired substance or process. It inquires as to the most expeditious means of attaining this result. In such a case, to investigate those aspects of things which obviously have no connection with the problem, on the ground that the stock of human knowledge will be increased by so doing, is to forget what one is about. The scientist and the practical man both give themselves immense credit for following precisely the same rule,—that of the division of labor.

"To the 'practical' man, the scientist incubates inefficiently because he does not check up vigorously enough with himself. And this arises from his hazy philosophy of not knowing exactly what he wants, or the probable value of it all. The scientist sometimes gives an unjustifiable extension to the rule of his work which is expressed by the phrases: 'Truth for Truth's Sake,' and 'Art for Art's Sake.' This is a minor rule of thinking, essential within its

as the Curtis Publishing Company and the National Suit and Cloak Company, use the services of experts who have given time and effort to the discovery of the laws of mental efficiency.¹ Indeed, our most successful men like Carnegie and Rockefeller, after a life of business struggle, testify to the value of business research by founding and maintaining institutions in which experts can carry on their investigations.

However, young men preparing for business should study the methods of the scientist that they may learn the laws, remember them, and understand how to apply them. Consciously or unconsciously, men are constantly applying laws, though, as we shall see, many of them are faulty—the results of “snap judgment” without adequate verification or checking up.

Verification.—An inference does not rise to the dignity of a law till it has been verified. In the hurry and bustle of modern business we are apt to accept conclusions without amply testing them.² Mere reasoning will not proper sphere, but it is limited in validity and in appropriate application by the force of the greater rule of life,—Truth and Art for Man's Sake.

“To the scientist, the ‘practical’ man does not even know the wide range of the practical. By impatiently applying to intermediate productive steps the tests which are appropriate only for final results, he cuts himself off from many indirect but highly profitable chains of productive effort. That science and practice are different is not a reason for antagonism, but for co-operation. Each may exercise a corrective influence upon the other. ‘We may hope,’ said Huxley, ‘that, at last, the weary misunderstanding between the practical men, who professed to despise science, and the high and dry philosophers, who professed to despise practical results, is at an end.’”

¹ See Kemble's *Choosing Employees by Mental and Physical Tests*.

² A word should be said here about the difference between making decisions and coming to conclusions. It is true that in business occasions arise when decisions must be made quickly. Not to make

do. The inference or law itself, as an approximation of what is probably true about the facts collected and classified, is a matter of inspiration or imagination. The verification is a matter of hard and patient work. Karl Pearson illustrates the proper method by telling how Darwin wrote his *Origin of Species*.¹

a decision promptly is perhaps worse than making no decision at all. A mind that has habituated itself to slow processes of reasoning would probably fail to acquit itself creditably in a position requiring quick decisions. On the other hand, a "snap judgment" mind that has no sound basis for its decisions is sure sooner or later to carry its enterprise on the rocks of disaster.

¹ Karl Pearson, *The Grammar of Science*, pp. 32-33. 'By collecting all facts which bore in any way on the variation of animals and plants under domestication and nature, some light might perhaps be thrown on the whole subject. My first note-book was opened in July, 1837. I worked on true Baconian principles, and, without any theory, collected facts on a wholesale scale, more especially with respect to domesticated productions, by printed inquiries, by conversation with skilful breeders and gardeners, and by extensive reading. When I see the list of books of all kinds which I read and abstracted, including whole series of Journals and Transactions, I am surprised at my own industry. I soon perceived that selection was the keystone of man's success in making useful races of animals and plants.'

"Here we have Darwin's scientific classification of facts, what he himself terms his 'systematic inquiry.' Upon the basis of this systematic inquiry comes the search for a law. This is the work of the imagination; the inspiration in Darwin's case being apparently due to a perusal of Malthus' *Essay on Population*. But Darwin's imagination was of the disciplined, scientific sort. Like Turgot, he knew that if the first thing is to invent a system, then the second is to be disgusted with it. Accordingly there follows the period of self-criticism, which lasted four or five years, and it was no less than nineteen years before he gave the world his discovery in its final form. Speaking of his inspiration that natural selection was the key to the mystery of the origin of species, he says:

"Here then, I had at last got a theory by which to work; but I was so anxious to avoid prejudice, that I determined not for some time to write even the briefest sketch of it. In June, 1842 (i.e., four years after the inspiration), I first allowed myself the satisfaction of writing a very brief abstract of my theory in pencil in 35 pages; and this was enlarged during the summer of 1844 into one of 230 pages, which I had fairly copied out and still possess.'

Hasty conclusions.—Nothing is so deadly to progress as the promulgation of unverified and faulty conclusions. Take, for example, the old idea that was followed blindly by business men for generations and that still persists in some quarters—that the lower the rate of wages, the lower will be the production costs, or the other equally erroneous principle that the longer hours people work, the more they produce. The fallacies of these archaic traditions are being exposed through the patient investigation of trained investigators.¹ The persistence of these traditions is sometimes amusing. Every progressive town in the United States perhaps has its newer section of fine homes, that is dubbed “mortgage hill” or “mortgage addition,” the inference being that the owners are guilty of extravagance and false pride. The fact is that the owners generally are business men who understand the financial principle of “trading on the equity” and mortgage their houses at six per cent to use the money in earning 20 per cent in their businesses.

Deduction.—As was indicated above, the logical process that will be most useful to the practical business man is deduction. He will take the business laws and apply them. The typical process of deduction is the syllogism:

All men are mortal.

John is a man.

Therefore, John is mortal.

This form of reasoning is constantly being used in business, though perhaps the formal steps are not expressed. Thus we say that an industrial company ought not gen-

“Finally an abstract from Darwin’s manuscript was published with *Wallace’s Essays* in 1858, and the *Origin of Species* appeared in 1859.”

¹ See Josephine Goldmark, *Fatigue and Efficiency*.

erally to issue bonds. This may be worked out at greater length:

Businesses with uncertain revenues should not issue bonds.

Industrials have uncertain revenues.

Therefore, industrials should not issue bonds.

We cannot go into the difficulties that may arise in this form of reasoning. Some of them have already been alluded to: the first sentence, or major premise, is the general law derived by inductive reasoning, and this, we said, must be true, and be proven to be true by examination of countless cases. One difficulty is illustrated by the syllogism itself. When deduction is expressed in a formal syllogism, there is a tendency to make it as concise as possible, and the major premise (businesses with uncertain revenues should not issue bonds) is made too sweeping. A more correct statement of this premise is that businesses may issue bonds with safety only in proportion to the stability of their net income. An industrial, for example, can with safety issue bonds up to an amount the interest on which is not in excess of its net income in its poorest year, and it is erroneous to say, therefore, that industrials should not issue bonds at all.

Deduction presupposes analysis.—Laws cannot be applied to situations until they are analyzed. The minor premise must be correct. We must be sure that industrials, in the example already given, have uncertain revenues.

To analyze a business situation requires a trained and informed mind. Indeed, business problems sometimes seem almost incapable of solution because it is impossible to analyze them. Price-fixing is a case in point

Frequently the problem is so complex that changes occur almost before the original facts are classified. A good example of analysis will be found in any Public Utility Rate-Making Decision.

Importance of analysis of business problems.—Few business men would care to put money into an enterprise before its possibilities have been adequately analyzed.¹ We are constantly putting money into enterprises and sometimes without adequate analysis. Mr. Harry Tipper gives an example that has been quoted by Cherington in his *Advertising as a Business Force*, p. 25. "The usual plan in by far the majority of cases where it is decided to market a new product is to start a few salesmen on what would appear, from a personal impression or general knowledge of the trade, to be the most important markets and feel the thing out in this way. An expenditure of \$20,000 to \$50,000 is easily absorbed in this experimentation without developing such information as would form the basis for an examination into the possible efficiency of selling and the possible profit to be secured. Personal impressions, even those of one or two men who have been brought up in the industry, are easily misled, by appearances and local conditions through restricted fields, into an entirely wrong conception of the market and the methods to be adopted in covering such market most efficiently. In working out a case a few years ago, the writer was particularly struck with this condition.

"The plant in question had a capacity which was considered by the experienced sales manager to be quite small.

¹ For an example of the analysis of a projected enterprise see Gerstenberg's *Materials of Corporation Finance*, pp. 457 et seq. See also Fischer's *Economics of Interurban Railways*.

It was also concluded by this gentleman that \$15,000 or \$20,000 could be spent for advertising this particular output in addition to the organization of a considerable sales force.

"Knowing very little of the trade conditions in this field and being impressed with the lack of statistics on the subject, the writer made an investigation, which was carefully carried out, into the possible market along the lines in which it was proposed to sell the article in question.

"This investigation showed: (a) that the personal impression or judgment of the sales department was utterly at fault and that the writer's judgment was equally out of line with the facts; (b) that the total consumption of the article in question in the field proposed did not absorb more than one-fourth or one-fifth of the capacity of the plant, and anywhere from one-eighth to one-tenth of the amount expected; (c) that the cost of the advertising and sales organization proposed would have been entirely out of line from the standpoint of possible consumption within the near future.

"While this was an unusual case, on account of circumstances in the industry involved, which made the apparent importance of the business much greater than there was any warrant for, it showed conclusively the necessity for investigation of the trade conditions in order to form a reasonable basis for the formation of a selling plan; and inasmuch as advertising is a part of the selling plan, the same necessity arose in the determination of the extent, method and conditions of the advertising.

"Apart from such an unusual condition as this, the

excessive cost of selling, due to promotion and sales work, covering fields and methods which the consumption of the articles would not warrant, has just as much to do with the difficulties in many organizations as the over-capitalization of physical properties.

"I have in mind a plant in the Middle West where, although the business had increased to the extent of requiring double the capacity to fill it, the waste of efficiency in selling and the consequent enormous promotion expenses made it impossible for this firm to realize sufficient profit to pay a dividend.

"It is well known that usually the expense of marketing equals 100 per cent of all the other factors entering into the cost of an article, and in quite a number of cases the proportion is even greater.

"This being so, it is evident that, in order to approach the question of marketing any particular material, it is necessary that the basic information should be at hand. This should be arranged in such shape that an intelligent investigation can be made with a view to approaching the market of the product with a high degree of efficiency."

The importance of scientific methods.—We have very briefly described the essentials of scientific method. These essentials consist of observation, analysis, definition, classification, inference and verification, plus the deductive method—that of applying general laws to particular problems. There seems to be little danger that America will make of method or efficiency a fetish the worship of which will lead us into such barbarities as have been committed by the most radical of the exponents of scientific method. Indeed, we can safely lay stress upon the

importance of scientific method as a means to a fuller economic life that will leave time and energy for the promotion and enjoyment of things spiritual and æsthetic. "The scientist is, in the broad sense, a creator of wealth as truly as is the man whose attention is focused on the application of science. Indeed, the scientist is merely the scout, the explorer, who is sent on ahead to discover and open up new leads to nature's gold. His motive may be merely to find out how nature works, but once that knowledge has been gained, man almost always finds a way to apply it to his own ends, so that in a very real sense all scientific effort is directed toward the improvement of human well-being by creating more wealth."¹

Finally, science alone can lead to future achievement.²

Analysis.—Facts, however obtained, are of no value

¹ From R. A. Millikan, "Twentieth Century Physics," Smithsonian Report for 1918, pp. 169-84, and "A New Opportunity in Science," Science, N. S., Vol. L. (1919) pp. 285-97, contained in Marshall's *Business Administration*, p. 533.

² Jones, *Business Administration*. "The first care, therefore, of the business community should be sound methods. We hear much of governmental and other reforms which are feared because they will disturb business. It is safe to say that there is hardly any probable destruction of property which will not, in the long run, prove immensely profitable, if it is the price which must be paid for a superior method. To say this is merely to apply the well-established American principle of scrapping obsolete equipment to the problem of getting rid of superseded and worn-out methods and policies.

"The paramount value of methods was emphasized by Mr. Carnegie, when he said, 'Take away all our factories, our trade, our avenues of transportation, our money; leave me our organization, and in four years I shall have re-established myself.' Results change from day to day; scientific methods are a heritage of intangible capital of more permanent value. Results represent past conditions; methods prepare for what is to come. To possess efficient methods is to have the power to recover lost results, or to replace obsolete results at will; but to possess results with inadequate methods is to begin at once to fall behind. Results may be acquired by accident; methods are transmitted only by the slow growth of habits. Results may be easily transferred; to the attainment of superior methods there is unhappily no royal road."

till they are analyzed and classified. Only after they have been analyzed can the like facts be drawn together preparatory to studying them as a step in discovering a law. The analysis, in the first place, should inform the investigator as to the homogeneity of the facts about to be studied. An example will make this clear: Some years ago an expert was employed by an advertising association to discover the laws of advertising value in the various positions on the two pages of a magazine—the right and the left. The experiments were conducted in a class in a leading university, and ordinary magazines were used. The first report was found to be almost valueless, since the effect of extraneous conditions was not taken into consideration. In measuring the attention value of the different positions, no allowance, for example, was made for differences in copy, in illustrations, or in type faces. The experiments had to be tried all over again, and in the second set of experiments “dummies” were used in which copy, illustrations and other incidents were made uniform.

The business man and the business student should constantly be on guard against faulty analyses. Examples of conclusions drawn before proper analysis has taken place will constantly be found. Thus in studying business activity it is customary to compare the bank clearings of one period with those of another without making allowance for the facts that bank clearings are affected in volume not only by the volume of business but also by the level of prices.¹

¹ Bank clearings, the author has suggested, can be made a better index of the volume of business if first divided by the index number of commodity prices.

Analysis should be sufficiently detailed.—If a proper conclusion concerning a set of facts is to be reached, the analysis must be sufficiently detailed to take account of each separate factor. Thus we may wish to find the proper wage to pay for a given kind of work. When that wage is found it may be called the law of wages for that kind of work. That the law will be faulty unless the analysis is made in adequate detail is nicely illustrated by an experience related by Dr. Frederick Winslow Taylor in his *Shop Management*, pp. 83-85. "When work is to be repeated many times, the time study should be minute and exact. Each job should be carefully subdivided into its elementary operations, and each of these unit times should receive the most thorough time study. In fixing the times for the tasks, and the piece-work rates on jobs of this class, the job should be subdivided into a number of divisions and a separate time and price assigned to each division rather than to assign a single time and price for the whole job. This should be done for several reasons, the most important of which is that the average workman, in order to maintain a rapid pace, should be given the opportunity of measuring his performance against the task set him at frequent intervals. Many men are incapable of looking very far ahead, but if they see a definite opportunity of earning so many cents by working hard for so many minutes, they will avail themselves of it.

"As an illustration, the steel tires used on car wheels and locomotives were originally turned in at the Midvale Steel Works on piece work, a single piece-work rate being paid for all of the work which could be done on a tire at a single setting. A fixed price was paid for this work,

whether there was much or little metal to be removed, and on the average this price was fair to the men. The apparent advantage of fixing a fair average rate was, that it made rate-fixing exceedingly simple, and saved clerk work in the time, cost and record keeping.

"A careful time-study, however, convinced the writer that for the reasons given above most of the men failed to do their best. In place of the single rate and time for all of the work done at a setting, the writer subdivided tire-turning into a number of short operations, and fixed a proper time and price, varying for each small job, according to the amount of metal to be removed, and the hardness and diameter of the tire. The effect of this subdivision was to increase the output, with the same men, methods, and machines, at least thirty-three per cent."

Analysis the basis of "Scientific Management."—Analysis is at the basis of so-called "Scientific Management." When industrial units were small a minute waste in a certain process was not felt much in the first profits. Besides, the margin of profits was broad enough to absorb such wastes. But as competition increased, and the margin of profits contracted and the processes of large units of industry were repeated many times, these wastes multiplied the losses and some analysis of the steps had to be made to cut out those steps that were unnecessary and to facilitate the operations that were performed awkwardly—that is, with a waste of energy. Thus grew up the science of cost analysis. Moreover, as the labor question loomed large on the horizon, and as men began to feel that its solution rested on a payment to laborers in proportion to what they actually contributed in the produc-

tion of goods and sciences, analysis of work had to be made every minute to arrive at a reasonable wage-rate system. This analysis took the form of "time studies."¹

CLASSIFICATION AND DEFINITION

Classification and definition.—In building up any science much depends on careful observation, but after all,

¹ Church, *Science and Practice of Management*, pp. 12-14. "The principle of time study is, in essence, the analysis of something into its elements, and observation of the times taken by a skillful operator to perform these elements. By adding the times together, it is possible to get a very close approximation to what may reasonably be considered the standard time for the whole job.

"This, of course, is merely doing systematically, and in an exact way, what the foreman or rate-setter did mentally and by the aid of his experience. Such a man did not really guess at the proper time. He rapidly ran over in his mind the successive steps to be taken, and pictured them to himself, allotting the proper time to each, and thus arrived at a result. The difference between his work and that of a time-study man was, chiefly, that he gave the answer, but did not disclose the workings. The latter records every detail of the way in which he arrives at the result, with the obvious advantage that criticisms and corrections may be made, and even the details themselves may be of importance for future reference.

"To understand what it is that time study, as an instrument of analysis, really does, we may suppose that a man undertakes an odd kind of journey for a bet. He undertakes to run three miles, walk five, swim half-a-mile, ride a bicycle two, crawl one, and hop half-a-mile, finally ending up by taking an aeroplane and flying six miles. And he undertakes to do all this within a given time. Now to look at the problem as a simple matter of traveling eighteen miles will not give us a good idea of the possible time it will take. If we are to make a wager with him—if, for instance, we are to give him fifty dollars if he completes the journey within a certain limit of time—it is obvious that we shall be in a very unsafe position if we do not carefully analyze each of the different kinds of progression that he has to make, and reckon up his probable speed as regards each.

"If, on the other hand, we make a list of the different kinds of movement he has to make, and apply our experience to assess his possible speed in each kind, and then aggregate the items, we shall be fairly close to a "sporting chance." But if we happen to have at hand trustworthy data of record speeds in each of these different kinds of movements, then we shall be able to make a very close wager, and it will depend on the man himself whether he rises to the occasion or not. Time study, as applied to jobs, works exactly in this way."

observation involves a comparatively lower form of intelligence than the next steps, analysis and classification. We observe with our senses but analyze and classify with our reasoning powers. Classification "denotes the systematic association of kindred facts, the collection, *not* of all, but of relevant and crucial facts."¹ In some sciences, as in Zoology, classification is, perhaps, the final purpose of the scientist, but in most of the sciences, while classification may serve many ends, it is primarily to be considered merely as a step in the important task of discovering the laws which may explain the facts classified.

Kinds of classification.—Scientists recognize by name several kinds of classification but are not always clear as to the true differences between the various kinds named. In general it may be said that classification may be for one or two purposes, and therefore may be of two kinds—first is the classification the purpose of which is merely to help us locate things. Such a classification one will find in the classification of books in the catalogue of a library. The simpler such a classification is the better. Even the eminent scientist, W. S. Jevons, in his *The Principles of Science*, says, "My own experience entirely bears out the opinion that classification according to the name of the author is the only one practicable in a *large library*."² The other form of classification is that which tells something about the things grouped together. From the standpoint of the student of science, that classification is best which is based on essential qualities of the facts or

¹ Karl Pearson's *The Grammar of Science*, p. 77.

² But the arranging of books on the shelf in accordance with a "subject" classification instead of an "author" classification is undoubtedly useful to the average person who has actual access to the shelves.

things classified and which, therefore, tells essential facts about all the things in a given class.

Classification into genus and species.—After a group of things have been divided into main groups, the classification may be carried further into sub-groups. A class which is divided into sub-classes is called a genus while the sub-classes are called species. The species may again be divided into other species, and in that case the original species will, as to the second group of species, be regarded as a genus.

Definition.—One of the most difficult tasks of the scientist is to define. A simple method of defining is to point out the object or to describe it. But these methods are not sufficient for scientific purposes. "If one should point to a horse, he might mean any one of a dozen of different things: horse, or simply animal, or useful animal, or large object, or gray, or beautiful, or dangerous and so on."¹ A more satisfactory method is to state the class or genus to which the thing defined belongs and the differentia which distinguish it from other things in that class. Thus a table is a board (genus) supported on the four corners in a horizontal position by legs (differentia).

Thus it will be seen that in defining things, we must always classify them. The question may be asked, Do we choose the main class or one of the sub-classes? Evidently the smaller the sub-class we can choose the nearer we will come to identifying the object at the outset. Thus to call a certificate of stock a corporate instrument, instead of a legal instrument, or just an instrument in

¹ Jones's *Logic, Inductive and Deductive*, p. 58.

writing, puts us more quickly in touch with the object to be defined.

Importance of selecting proper class.—The chief difficulty in defining is experienced by untrained minds in placing objects in the proper genus. Thus, what is a *share* of stock? It is *not* an instrument in writing; the instrument in writing is merely the *certificate* of stock which represents the share.

Importance of definition and classification in business.—The science of business is crying for exact definition and scientific classification. One needs to go no further than the income-tax legislation to find a phase of business presenting thousands of questions, all of which could be answered by definition or classification. Even elementary discussions in economics often suffer for lack of clear definition. Take the word "property." People confuse property with "wealth" because they do not get those terms into their proper classes. Property consists of rights—in other words, of intangible relationships existing between things and people, while wealth consists of the things themselves.

The whole subject of accounting as well as that of finance labors under the difficulty of nomenclature consisting of words that are not actually defined and used by business men. What is actually meant by "depreciation," "quick assets," "capital," "expenses"—these are but a few of the questions that have caused much discussion, oral and written. And it may happen that, as in the case of the Excess Profits Tax, thousands of dollars may be at stake in the application of a general definition to any given term. For example, is a stock dividend in-

come in the hands of the stockholders? The settlement of that question one way or the other meant millions upon millions of dollars to the Government and to stockholders.

Importance of authority in framing definitions.—One of the difficulties in the formulation of definitions of terms pertaining to the science of business is that the science itself is comparatively young, and commentators have not had time to frame definitions that meet with universal acceptance. From time to time, however, business terms come before the courts and then the law, speaking through the courts, defines these terms with an authority that cannot be disregarded.¹ In the same way, legislatures and administrative departments of the Government sometimes give authoritative definitions. Not the least important benefit of the income tax laws will be the authoritative definition of technical accounting and financial terms.

The reader must be warned to note the difference between authoritative, and logical or scientific. Thus some of the rulings of the Treasury Department at Washington may not command the respect of scholarly accountants, but in preparing returns for the tax these same accountants will have to accept the definitions of the Treasury Department instead of trying to follow their own ideas.

Where authority to define may be found.—If the definition of a term has the sanction of some branch of the Government, that definition may be considered authoritative, even if not logical. Those who object to the definition may frequently find it wise to abandon the

¹For an excellent example of judicial definition of business terms, see *Kansas City Southern Ry. vs. United States*, 231 U. S., 423.

term entirely for the use to which they had previously put it, and to use some other term to express that use or purpose. Moreover, if it is felt that an "authoritative" definition narrows down unduly the meaning of a term that formerly had a broad meaning, new words may be "coined" to fill the vacancy. Thus, at one time the business man generally meant by "good-will," the excess of capitalized earning power over the cost of physical property invested in a business. Gradually an entirely new set of words came to take the place of this one word, and today, as well as "good-will," we have such expressions as "going-concern value," "intangible assets" and the like. The term "good-will" is used principally with respect to the assumed value of the patronage attaching to an established business, while "going-concern" value is used with reference to the value attaching to a business by reason of its being organized and in running order, and not merely a number of unrelated elements.

The truth of the matter is that language, like life itself, and like society, is ever changing; the task of defining terms, therefore, will never be completed. Things that are to-day *infima species* (a class that includes so little that it cannot be subdivided) will to-morrow constitute a genus with its subclasses.

Naturally business itself will keep ahead of the law, and new terms will constantly be coined to meet new situations. To bring order out of the confusion created by the coining of new terms as well as by the use of old terms by people who do not understand them, scientists frequently attempt through their learned societies to establish authoritative definitions, strengthened by the formal

approval of the association. Unfortunately many of these attempts at the construction of authoritative glossaries have been futile. So far as the writer knows nothing has come of the attempt of the American Economic Association, a number of years ago, to formulate a set of authoritative definitions of economic terms; likewise nothing has come of the attempt of the American Association of Public Accountants to provide themselves with an authoritative uniform nomenclature.¹

Importance of understanding the sense in which a word is used.—If language were perfect, no two words would mean the same thing, nor could one word be used to do duty for more than one object or idea. Unfortunately language is not perfect and the careful student will always have to be on the lookout for double uses or double meanings. The word *capital*, for example, is used by economists in one sense and by business men in another sense. The economist, when speaking of a company's capital, means all the *wealth* that the company employs in earning income, while the business man means all the *property* owned—not *borrowed*—and used in the business.²

Some typical classifications in business.—To illustrate how important classification is in modern business,

¹ For a typical report on nomenclature, see report of the Special Committee to Formulate Principles and Methods for the Valuation of Railroad Property and Other Utilities, Jan. 17, 1917, Meeting of the American Association of Civil Engineers.

² Notice that in the use of the word *capital* in the Excess Profits Tax Law of 1917, Congress did not harm either of these conceptions of the word "capital." Very properly, and merely by adding an adjective, it coined a new term to express what it had in mind—*invested* capital. In the same way some careful writers supply the terms "business capital" and "economic capital." See Conlin, 1918 *Income and Federal Tax Reports*, pp. 639-698.

a brief explanation may be given of some well-known and important classifications.

The Interstate Commerce Commission's Classification of Accounts.—The classification of accounts of railroads furnishes a good example of the very slow progress that is made by professional associations in formulating uniform definitions. "The American Association of Railway Accounting Officers has been in existence ever since the early history of railroads, but although its members met and discussed theories and practices of keeping railroad accounts, there was no recognized uniform system."¹ In 1870, a convention of State railroad commissioners held at Saratoga, New York, discussed the question of uniform terminology in railroad accounting and adopted a scheme for a certain uniformity of accounts. This was later drawn upon by the Interstate Commerce Commission when the Commission issued orders requiring uniform annual reports. In 1897 the Commission classified construction accounts. Not until 1906, however, did it have power to compel the railroads to interpret its classification uniformly. Some idea of the extent to which the Commission has gone in its classification and in the interpretation of its classification may be gained from the fact that an alphabetical index of the items of operating expenses of railroads is printed in a pamphlet of 297 pages.

The classification of accounts itself is a good example of a classification intended to set forth something about facts. "In drafting a system of railroad accounts, two motives appear to have actuated the Interstate Commerce

¹ Hooper's *Railroad Accounting*, p. 29.

Commission. The first was the desire to know actual operating costs so as to have a basis of equitable rate making. The second motive back of the uniform accounting system is the desire for reliable statistical information correctly portraying the financial status and fiscal operations of the great transportation agencies.”¹ The alphabetical index of the items in the classification furnishes a good example of index classification.

Other classifications of business facts are the customs classification of imports and the railroad traffic classifications of commodities. Anybody who has had practical experience with either of these classifications will appreciate the importance of scientific classification and exact definition in every-day business life.

Rule of scientific classification.—The serious student of business will want to bring to his study this elementary rule of science pertaining to logical classification: A classification should include in its subclasses all that is included in its main class (rule of inclusion), and the subclasses should not overlap (rule of exclusion). This does not mean that the main class cannot be classified in different ways, but the several classifications should not be confused. Thus corporations may be classified (1) as domestic, foreign and alien; (2) as industrial, transporting, public service, and extractive. The first classification has for its purpose the arranging of all corporations with respect to the location of their legal residences considered from the standpoint of any State in the Union. The second classification looks at corporations from the standpoint of the commodities or services they produce. A

¹ Sakolski's *American Railroad Economics*, p. 172.

classification, thus (a) domestic, (b) railroad, (c) extractive, (d) industrial, would be wholly illogical, since it violates both rules of inclusion and exclusion spoken of above, and since it serves no useful purpose.

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CHAPTER VI

FORMS OF BUSINESS ENTERPRISES

Importance of the form of organization.—When an individual enters business, either actively or as an investor in a business enterprise managed by someone else, he is perhaps as much interested in the form of the organization as in any other feature of the business. This is not surprising, for the form of the organization determines largely what share of the profits the individual may obtain for himself, how much control he can have over the business, and how much risk he assumes. If he invests his money and services in a partnership, he may lose not only what he has invested, but also every other penny he possesses. In a corporation, on the other hand, his possible loss will be limited to the amount of his investment—except in the case of banking and other corporations in which money is held for depositors, in which case the liability may be double the amount of the investment. He knows in advance what his maximum loss can be. No wonder then, that there has been such a large increase in the corporate form of doing business!

Various forms of organization.—The most important kinds of business organizations in America are the individual proprietorship, the partnership, and the corporation.

The individual proprietorship is a business enterprise owned by an individual, who is usually the manager and the pivot of the business, as well as its owner.

The partnership is a joint form of individual proprietorship. It is a combination of the skill, property, or money of two or more individuals, who jointly own and manage the business, each, under the law, having an equal responsibility.

The corporation is a device sanctioned by the Government for carrying on an enterprise by several persons (or by one person) in such a way as to constitute the enterprise itself an entity entirely distinct from the persons who are interested in it and who control it. This makes possible the entire separation of the ownership of the business from the management; some persons may furnish the capital to the business and have it actively managed by others, who may be removed at the will of the owners.

There are other forms of organization that are the outgrowth of these three. The joint-stock company is a partnership with transferable shares. The limited partnership is a partnership in which some of the partners have a limited liability. The association formed under a deed of trust, or the so-called Massachusetts trust, is an adaptation of the corporate form to the common-law trust created by a will.

The individual proprietorship.—The individual proprietorship is the earliest and simplest form of business organization, and even today it is the most prevalent. The small merchant likes to conduct his business in this form because it is easy and inexpensive to create, and because its organization is very simple. No formal document need be drawn and no organization fees or taxes need be paid by a business starting as a sole proprietor-

ship. Any individual is free to engage in such a business at will, and if he finds that his undertaking is not sufficiently profitable, he may discontinue it and divert his capital into more profitable channels. Likewise with respect to its management or control, the individual proprietorship is relatively free from outside interference. The owner himself buys goods and sells them again, pays his help, or designates employees to do these things for him; whatever profit is made is the proprietor's own profit, which he may reinvest in the business or otherwise dispose of as he will. Of course, if he has debts he must pay them or his creditors will seize his property. In such a case, if the assets of the business itself are not sufficient to pay the debts, the creditors may take—if necessary—all of his other property. His liability is unlimited. While, from the standpoint of the owner, this may be looked upon as a serious objection to the individual proprietorship form, we must not lose sight of the fact that on the other hand, since the creditors may look to all of the owner's property, they are likely to be inclined to grant credit more liberally to the individual proprietorship than to a concern whose owner's liability is limited. The individual proprietor, accordingly, is able to secure a larger amount of borrowed working-capital, and consequently to do a larger volume of business and make a larger amount of profits, than if his liability were limited.

Naturally, a sole proprietorship does not often become very large. The success of the business depends too much upon the presence and personal attention of the proprietor; in case of his sickness or death it is doubtful

what would become of the business. Usually then, the business has only such an amount of capital and as many employees as the owner can give attention to himself, although it is possible for an individual of extraordinary organizing ability to carry on a very large business with the help of able assistants and by means of an intelligent division of work.

The general partnership.—A business of the partnership form is very similar to the individual proprietorship; but the owners are two or more in number. So far as the public, or the law, is concerned, whatever is done in or for the business by any one of the partners is done by each and all. Thus, if any partner contracts a debt within the scope of the partnership business, not only the business assets are liable, but all of the individual assets of all the partners are also liable. This is true even if the debt has been contracted without the consent of the other partners, because, so far as outsiders are concerned, each partner has a right to act for the partnership. If the partners should disagree on any point, it is easy to see that this latter rule might lead to serious quarrels or complications.

Another objection to the partnership is the constant danger of its dissolution. The death, insanity (mental death), or bankruptcy (financial death) of a partner automatically dissolves the partnership. So does the withdrawal of a partner, in spite of any agreement to the contrary.

Profits and losses of the partnership may be divided as the partners may agree. If no agreement, however, has been made as to the sharing of profits and losses, each

partner receives an equal share of the profits and bears an equal share of the losses, irrespective of the amount each partner has invested in the business.

Advantages and disadvantages of partnership.—The partnership is formed without paying any fees to the State, and is conducted without paying many of the taxes to which corporations are subject. The fact that its members are personally liable for its debts makes it more responsible and entitled to greater credit. This same fact, however, discourages the average person from joining a partnership. In view of this objection and in view of the constant danger of dissolution, partnerships find it difficult to obtain much permanent capital. The average investor prefers to put his money into an enterprise whose form is such that he may know beforehand what his maximum loss can be and such that his interest in it can more easily be sold or transferred. If his investment is an interest in a partnership, he cannot very well sell it, except to the remaining partners or to a person entirely agreeable to them, for if he did so, the partnership would be terminated.

The limited partnership.—A partnership is satisfactory only so long as the partners know each other well and have absolute confidence in each other. Strangers would not invest money with such a firm, because they could not know what liability they might incur as partners. The limited partnership, accordingly, has been devised, under which special partners may be admitted to the partnership, who have no voice in the management, but who may invest money and receive a certain share of the profits without incurring any liability for debts of the

firm in excess of the amount they have invested. There must be one or more general partners who manage the business and who remain liable as ordinary partners for all the debts of the business. Such a partnership is formed only under State statutes, usually by filing a certificate in a public office and publishing a notice in a newspaper.

The joint-stock company.—The joint-stock company is a form of partnership that lacks some of the disadvantages of the ordinary partnership. Like the ordinary partnership, each member of the joint-stock company is personally liable for all of the debts of the company. But, unlike the partnership, the ownership of the joint-stock company is divided into shares which may be sold from one person to another, without ending the life of the company. Instead of each member having the right to act as general agent for the firm, the control is turned over to a board of directors elected by the shareholders as determined by the by-laws. In this, as well as in its form and management, the joint-stock company closely resembles the corporation.

It is possible for a business with this kind of organization to exist indefinitely, since it is not dependent upon any one or more individuals for its existence and management. Moreover, since members may withdraw at any time simply by selling their shares, it is easy to secure capital, if the business is well-managed and profitable. The great objection to the joint-stock form of organization is that the members of the company are personally liable for the debts of the company.

Associations formed under deeds of trust.—A busi-

ness association formed under a deed of trust is very much like a joint-stock company or corporation in outward appearance. The legal ownership of its property is vested in "trustees" who hold the property and manage it for the beneficiaries or shareholders, who for all practical purposes are the real owners. Each beneficiary has a certain number of shares of the capital of the business, and these shares may be sold as may the shares of a company or a corporation. The difference is this, however, that the trustees are not elected annually or at other stated periods by the shareholders, but are appointed at the beginning and remain in office until they resign or are removed for mismanagement or other good cause. New trustees then may be appointed or elected, either by the remaining trustees or by the shareholders, as may be provided in the deed of trust. Shareholders in this trust are not personally liable for the debts of the association. Creditors can look only to the trustees, or more usually only to the property of the association. If the trust deed, however, provides that the shareholders may remove the trustees and appoint others to fill the vacancy, the association will be held to be a partnership¹ and not a trust, and the shareholders will be liable to the creditors. This liability the shareholders have usually avoided by requiring the trustees to stipulate in all contracts that the shareholders shall not be liable.

Advantages of trusts.—The very large industrial combinations and *quasi-monopolies*, which are commonly called "trusts," are not to be confused with the business

¹ See *Frost vs. Thompson*, 219 Mass. 360 and *Williams vs. Milton*, 215 Mass. 1.

association in which we are at present interested. The latter may be formed to conduct any business, large or small. To organize, it is only necessary to draw up an instrument called a deed or declaration of trust,¹ describing the business of the association and the rights and duties of the trustees and shareholders. No organization taxes to which corporations are subject, are paid to the State. Moreover, the trust is "more flexible, more economical, and more convenient than the corporation. Trustees can do business with more ease and rapidity than a board of directors."²

The trust, moreover, does not have the disadvantage of the unlimited liability of members of the joint-stock company.

The corporation.—In many respects the corporation closely resembles the joint-stock company. The ownership of its capital is divided into shares which are salable like the shares of a joint-stock company. The shareholders or members are not agents of the business, but, as in the joint-stock company, the corporation is managed by directors elected by the shareholders. The important difference between the two forms is this—that the shareholders of a corporation are not personally liable for its debts.³ In this respect the corporate form enjoys a distinct advantage; the limited liability of shareholders

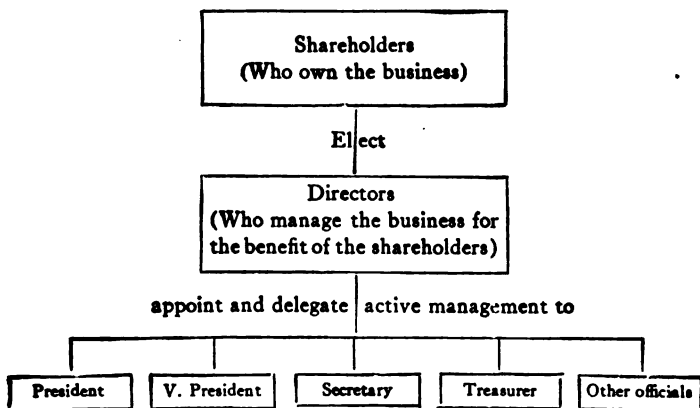
¹For such an instrument, see Gerstenberg's *Materials of Corporate Finance*, p. 11.

²*Report of Commissioner of Corporation of Massachusetts*, January 17, 1912.

³In some States, including New York, shareholders are personally liable to employees of the corporation for unpaid wages. In California, stockholders are personally liable for all debts of the corporation. In practically all States, stockholders of banks and financial institutions (in Minnesota, stockholders of all corporations) are liable for twice the amount of their subscriptions.

facilitates the raising of capital, but increases the difficulty of borrowing.

Organization and control of corporation.—The corporation is formed under State statutes permitting their incorporation, usually by filing a certificate in a public office and by paying an “organization tax” to the State treasurer. Thereafter, each year, the corporation is usually required to file a report with the State and pay a tax for the privilege of doing business. This is a decided disadvantage of the corporate form but it is offset to some extent by (1) the limited liability of shareholders, (2) the marketability of ownership in the company, (3) the continuous existence of the organization, (4) the greater possibility of attracting investors and (5) its adaptability to efficient organization. As a shareholder *per se* is not an agent of the corporation, the plan of organization may be very satisfactorily worked out. This is true also of the joint-stock company and trust. A simple form of organization is illustrated in the following chart:



These latter officers actively conduct the business operations and appoint minor employees. They are subject to the control and general supervision of the directors, to whom they are responsible.

In order that the corporation (or joint-stock company or trust) may be managed as the stockholders desire, the stockholders, upon the organization of the company, draw up and adopt a set of by-laws, setting forth the general rules by which the stockholders themselves, the officials and the directors shall abide. Among other requirements, the by-laws provide that the directors shall meet at regular intervals, to dispose of such matters as may require their attention.

Once or twice a year, or even oftener in some cases, the directors decide how much of the profit which has been made shall be reinvested in the business and how much shall be paid as dividends to the stockholders.

Classes of ownership.—When several individuals or, perhaps, a large number contribute the capital an enterprise needs, some may be so confident of the success of the business that they are willing to wait for their shares of the profits until the less optimistic investors have been paid. In compensation for the risk they assume, they naturally will require a possibility of receiving larger profits, and perhaps the right to have a dominating influence in the control of the company. On the other side, there will be the cautious investor, who prefers to be more certain of a profit, even though it be small. How will it be possible to give both of these classes of prospective owners of the enterprise what they desire? Simply through the creation of different classes of owner-

ship or stock—one class of stock being known as *common* or *ordinary* stock, the other being called *preferred* stock.

The most usual kind of preferred stock is that designated as *preferred as to dividends*, by which is meant that the holders of such stock must receive, annually, out of the first profits earned by the corporation and distributed by the directors, an amount equal to a specified percentage of the amounts of their investments—usually from six per cent to eight per cent. If the preferred stock is *non-participating*, as it usually is, it cannot receive more than the stipulated percentage of its face value, even though the common stock should receive a dividend of 100 or 200 per cent. The preferred stock having received its stipulated dividend, the balance of the profits belongs to the common. If, however, the preferred stock is *participating*, after it has received its stipulated dividend, of perhaps 7 per cent, it will get a further share of the profits, either on the same basis as the common stock, or in any other ratio which the organizers may have provided. If the preferred stock is of the class known as *cumulative*, the holders will be more certain of receiving their preference dividends, for if the stipulated dividends on cumulative preferred stock are not paid in any one year or series of years, they accumulate as a claim against future profits, and must be paid before the common stockholders can receive any dividends whatever.

The preferred stockholders are further protected if their stock is also *preferred as to assets*—in which case, if the corporation or association should be dissolved, the preferred stockholders would be entitled to the amount they originally contributed, plus the accumulated pre-

ferred dividends, before the common stockholders could receive any of the proceeds of the liquidation. The preferred stock may be made additionally attractive to the investor by making it *convertible*. The holder of convertible preferred shares could exchange them for shares of common stock, if the latter should ever become more desirable than the former because of unexpectedly large earnings.

If the co-operators in the enterprise wish to give a certain class of stock the entire control, they may simply take the *voting power* away from all other classes. If the holders of the other classes are apprehensive lest this power be abused, they may be given the right to veto certain acts of the holders of the voting stock—for example, they might be given the right finally to determine whether any security which would be superior to their own might be issued. Stock entitling the holder to exercise such vetoing power is called *vetoing stock*.

It will be seen then, that in the corporation, joint-stock company or trust, the number of ways in which income, risk and control may be divided among various classes of owners is limited, practically, only by the ingenuity of the projectors of the enterprise and the objects which they may have in view.

Voting trusts.—It often happens that conditions arise which make it desirable or even necessary to place the control of a corporation in the hands of an agreed-upon management for a given period, usually for a number of years, in order that some policy or undertaking may be consistently carried out or brought to completion without the risk involved in a change of administration. This is

frequently the case when the reorganization of a company is undertaken by a banking house. The bankers are anxious to provide for a management that will insure the success of the reorganized company, for their reputation as well as their profit is at stake. The bankers, however, do not ordinarily have a controlling interest in the company. A *voting trust* is therefore formed, under which the stockholders of the company deposit their stock with trustees (who in this case would be nominated by the bankers), giving them the right to vote the stock and collect the dividends on it. The trustees in turn issue *voting trust certificates* to the stockholders, and pay over to the holders of these certificates the dividends collected on the stock. Now the bankers are assured of control and of a management satisfactory to themselves.

Voting trusts are useful also in establishing a management for a term of years in accordance with an organization agreement. In other cases they may be used to give creditors of a corporation temporary control in order to avert the necessity of their instituting foreclosure, insolvency or bankruptcy proceedings.

Usually, the law requires that a voting trust agreement be limited to a reasonable time; that all stockholders of the corporation be permitted to join; and that it be for a legal purpose. A voting trust, for example, in which the stockholders of several competing companies turned their stock over to the same trustees, enabling them to eliminate competition and form a monopoly, would be illegal and void.

Consolidations.—Two or more corporations may combine into one larger concern. By an *amalgamation*, com-

panies A and B, for example, may form corporation C. By a *merger*, they may effect the same purpose—continuing one of the corporations under its old name and merging the other into it. A merger would be more desirable than an amalgamation if the continuing corporation had a valuable good-will based on its advertised name. When the companies are combined in this way, the new company succeeds to all the rights and obligations of the old companies.

Another method of accomplishing the combination of two corporations is that by which one corporation purchases the entire assets of the other, paying for the same usually in the stock of the purchasing corporation. This stock may then be turned over to the shareholders of the selling corporation—which then goes out of existence—or, if it appears desirable to keep the corporation in existence, the stock received by the corporation in exchange for its assets may be held by the corporation itself, in which case any dividends received on the so-acquired stock would be distributed to the stockholders of the corporation as if they had been ordinary profits from operation. Sometimes, instead of purchasing the assets, one corporation may lease, usually for a long term of years, the entire property of another, paying therefor a specified amount, or more usually a guaranteed dividend on the stock of the lessor corporation.

Consolidation through stockholding.—The operations of two or more companies may be combined by placing the controlling interest of each corporation in common hands. This is accomplished by placing the ownership of a majority of the stock of each company in

the hands of an individual, a group of individuals, or more usually, a *holding company*. The holding company is a corporation organized for the express purpose of owning stock in other corporations. It will buy a controlling interest, usually a majority of the stock, of two or more corporations. It may pay for this stock by issuing its own stock; or if this cannot be successfully accomplished, it will pay in cash obtained from the sale of its own stock. Having secured control of the several corporations, the holding company will elect a majority of the directors of each controlled corporation. It is then in a position to direct the activities of the constituent companies along the lines of common interest. Thus, although the controlled, or subsidiary, corporations are preserved as going concerns, the wastes of competition are avoided and all the advantages of consolidation are obtained.

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CHAPTER VII

FINANCING

Importance of correct methods of finance.—The strength of a chain is its weakest link. On this principle it can be predicated that no one function of business is more important than the others. But at the same time, it cannot be denied that some parts of the business machine are more intimately associated with the success of the enterprise than are others. Thus selling faults may be localized and remedied, for if goods are not sold production can go forward and goods may be piled up till a new selling device or staff begins to move them. But financing affects all parts of the business and must be done right to keep them moving smoothly. The relation which finance bears to the other functions may be illustrated by the following diagram:

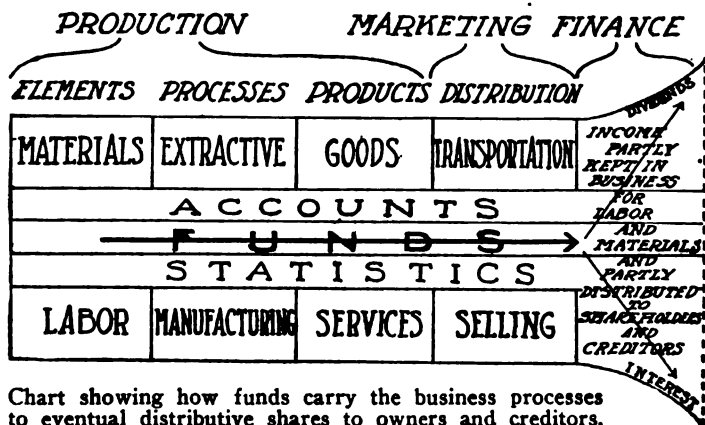


Chart showing how funds carry the business processes to eventual distributive shares to owners and creditors.

PROMOTING AN ENTERPRISE

Promotion.—The subject of promotion is usually considered a financial problem, though, as we shall see, financing is really only a part of the problem of promotion. By promotion is meant the conception and organization of a new business or combination of businesses. The first step in promotion is conception or discovery. The discovery may consist of the invention of a new process or a new device, the idea of supplying of some old social want in a cheaper way, or the saving of costs by combining old established units of business. To be sure, businesses are frequently promoted that have none of these economic justifications, as where a retail merchant's clerk opens a competing store even though his employer has not made a fortune when enjoying a limited monopoly. The fact is that promoters concern themselves chiefly with private profit and consult social welfare only to the extent that it is necessary to determine from its demands the likely success of the contemplated venture. Fortunately, public welfare and private gain run parallel most of the time, and one who seeks to promote the one will ordinarily achieve the other.

Too much monopoly and too much competition are injurious, the one for the public and the other for the competitors. But aside from the regulation of the government, there are inherent forces that in each of these forms of anti-social business operations tend to correct their own evils. Thus monopoly gains tend to invite competition, and severe competition tends to eliminate the weaker competitors. So business at any time and

place constantly see-saws back and forth from few competitors to many competitors and seeks to find that state of equilibrium in which public welfare and private profit will in the aggregate bulk up to the largest possible quantity.

This argument in general is the one that the promoter must understand before he undertakes to establish a new business. He will probably not look at it in just the way we have expressed it; his calculations will all be in terms of dollars and cents, of income and outgo, but his calculations will be affected by the broader principle we have outlined.

Promoter's calculations.—Let us see just how a promoter goes about his work. He has conceived a new idea, say a new adding machine.¹ He must first calculate how much money will be required to put his machine on the market and estimate whether or not the profits will warrant the investment of money and effort. His problem may be stated briefly as follows: Can I take in enough money from the sale of my machines to pay for (a) making and selling them, and to pay (b) a reasonable return on the money invested in the business besides leaving (c) a fair amount of profit. To discover how much money can be taken in the promoter will have to make a study of the possible market and will do well to engage the services of a market analyst, or at least to

¹ We seem in the text to make the inventor of the machine the promoter. In truth these two functions of invention and promotion call for personal qualities that are seldom united in the same person, and the promoter therefore is likely to be a person who discovers not the invention but the inventor. For a general discussion of this point, see Taussig's *Inventors and Money-Makers*, and Sombart's *Quintessence of Capitalism*.

get the aid of people experienced in the general line in which he is to launch his enterprise. Rough guesses will not do and are not necessary. To ascertain fact (a) he will have to make a close study of all manner of operating costs. Fact (b) is derived from an estimate of the probable amount of capital required to put the business in operation, including, as is shown in a following paragraph, money for promotion expenses, for fixed capital and for establishing the business as well as for a permanent working fund. His calculations in their most familiar form may be arranged as follows:

| | |
|---------|----------------------------|
| | Gross Income |
| Less | Operating Expenses |
| Leaving | Net Income |
| Less | Interest on Capital Raised |
| Leave | Profits |

Estimating gross income.—So important is each of the items entering the calculations of the promoter that we had better consider each separately though briefly.

Gross income is calculated generally on the basis of some statistical unit—thus an annual income of \$2.50 per capita of population of the territory served in the case of a small gas company; the sale of one office device per 100 banks in the country, and other like units. Let it be understood that these estimates are not easy to make and that they require careful collection of facts and close analysis. Mere guesses are too dangerous. And in any event consideration must be given not only to present conditions, but to future changes and potentialities as well.

Calculating operating expenses.—Experience in the

same line of business is quite essential to approximate the probable operating expenses. In the first place, it is necessary to include all expenses—production, selling, general administration, up-keep and contingencies.

Moreover, it must be remembered that operating expenses do not vary directly with variations in the gross.¹ General administration, for example, is likely to cost a certain sum whether a thousand articles are sold a month or twelve or fifteen hundred. For this reason operating expenses are likely to be relatively high² while the projected concern is young.

Estimating the capital expenses.—The promoter then calculates the amount of money that will be required to start his enterprise as a money-making proposition. He will require money for the following purposes:

1. Promotion.
2. Construction.
3. Building up the business.

The promotion expenses may be small or large, depending on the business. In general it may be stated

¹Ripley, in his *Railway Rates and Regulation*, p. 55, estimates that about 45 per cent of railway expenses vary with the gross and that the rest are quite stationary.

²The ratio of operating expenses to gross revenue is called the operating ratio. It is a statistical unit of much value, since it indicates operating efficiency. If railroad A, for example, has an operating ratio of 65 per cent and railroad B has an operating ratio of 80 per cent, the former is quite likely to be the more efficiently operated. To be sure, there may be other circumstances that would make such a deduction quite erroneous. Thus, if we think of these two roads as ordinary manufacturing companies, and if B has a much smaller capital invested in its plant than A, it is likely that A has a small operating expense because it is using machinery whose decrease in operating expense may be offset by large fixed charges or by large requirements for dividends.

that the broader the plan and the larger the profits expected, the greater will be the promotion expense. In some businesses promotion expense is the largest money-cost. There is practically no construction, and the business quickly establishes itself after the promotion has been carried out. Take the promotion, for example, of several successful competing plants. The promoter will be required to visit the plants' owners, to get a statement of the plants' affairs and to negotiate the terms of the combination. He may be required to engage the services of expert accountants, appraisal engineers and lawyers. But after all this work—this promotion work—has been done and the ownership interests are readjusted, the business goes on without additional financing.¹ The same observations hold true where a business plans to have its product manufactured and to use established agencies for selling them.

Promotion expenses.—Promotion expenses of a new concern consist largely of the money spent by the promoter in assembling the units of his future business. He may be required to investigate patents, to calculate the possibilities of the new venture, to find the means of manufacturing, to get the manufacturing, whether by the new business itself or by some outside concern, planned and arranged for, to get the selling department arranged and to plan the means for raising all the neces-

¹ Additional financing may, of course, and frequently does enter into the promotion, but not necessarily. Combinations have required working capital because the constituent companies have been stripped of working capital by their owners as a step preliminary to consolidation. For an example, see Gerstenberg's *Materials of Corporation Finance*, p. 538, and notice that the assets taken over do not include cash or accounts receivable. See also pp. 489-495 for a statement of the costs of promoting a consolidation.

sary funds. The expense of doing all this will likely be met by the promoter himself, though he will undoubtedly reimburse himself later by taking from the concern some form of capital obligation, usually common stock.

Construction expenses.—In the case of a new manufacturing concern, such as one to make and sell an adding machine, the cost of getting the plant and its equipment must be estimated and the amount of funds necessary to procure them must be raised. In estimating the capital requirements care must be taken to include not only the cost of the assets themselves, but the expense of putting them in place, and an allowance should always be made for contingencies. Moreover, while this is being done the business organization will have to be built up and the cost of assembling and maintaining the organization will have to be met out of capital till revenue from current operations can produce the necessary income.

Assembling.—After the promoter has “discovered” his project—discovery including such preliminaries as investigating it to see how much money will be required to start it and to operate it, and how much money it is likely to bring in—the promoter will be ready to take the next step in promotion, viz., “assembling.” By assembling is meant the bringing together of the various elements that will enter the completed operating concern. For example, if a patent is to be promoted, the first problem is to see if the patent is valid, as well as commercially valuable. The next step is to get control of the patent and to get the proper kind of men to make and sell the patented article. If we take a more complex

problem like the promotion of an interurban electric railway, the difficulties will be greater. Franchises, rights of way, contracts for construction, contracts of employment of managers will all have to be obtained or proven obtainable before capitalists will take any interest in looking over the scheme. Where the promotion consists of the consolidation of several companies, option agreements, agreements to consolidate, or purchase agreements will be necessary. Oftentimes the promoter will spend much time and effort, as well perhaps as a considerable sum of money for expenses, in getting these various agreements. He must act circumspectly in presenting his proposition to prospective capitalists, for if the latter are unscrupulous they may go to the various concerns about to be consolidated and deal with them directly, thus leaving the promoter out in the cold. In such a case the promoter's work will have made the consolidation easy for the capitalists, for he will have persuaded the concerns to agree to the consolidation. Indeed, his engineers and accountants may have figured out what the various plants are worth and their calculations may be accepted as the basis of consolidation, though the capitalists, being unscrupulous, will seek to avoid reimbursing the promoter for his actual money outlay or compensating him for his time and trouble. Much less will they give him a reasonable promoter's profit for what he had accomplished before the matter was brought to the attention of the capitalists. To protect himself from such a situation the promoter must see that his contracts, including his contracts with the prospective capitalists, are all carefully drawn. Thus it

will be seen that assembling a proposition is not a matter to be considered lightly.

After the proposition has been discovered and assembled the promoter is ready to go to the banker or capitalists to have it financed.

WORKING CAPITAL

Working capital.—Given a business machine complete in all its parts, with every function manned by competent men, there still remain demands for funds necessary to put the entire machinery in operation and to keep it in operation till the business pays for itself. These funds may be called the initial working capital. By working capital, as the term is commonly used by business men, is meant the net amount of liquid funds, consisting chiefly of cash and accounts receivable, less the amount of current or liquid debts—such debts as have to be met within a reasonably short time. Initial working capital, it will be seen, is somewhat different. It consists of funds that will be used in developing the business without acquiring any definite tangible asset. A common business practice is to keep an account of money spent in such a way, and to call it an asset under the name of good-will, going concern value, or organization expense. Though the asset is not very real, in the sense that it cannot be seen or even very accurately estimated in advance, it is nevertheless a very real cause for the spending of money, and the promoter who does not provide sufficient funds for starting the business and for giving it plenty of opportunity to establish itself, launches his craft without sails or motive power.

Changes in working capital.—After a business is started it is always required to keep on hand a certain excess of liquid assets over liquid liabilities. This excess—working capital it is called—is a contingency fund to meet immediate requirements. A concern such as a public utility, for whose products there is a constant demand, and whose income may be collected in advance of expenditures or at the same time that they are incurred, needs but little working capital. Thus it is generally reckoned that a street railway is safe if it has sufficient working capital to pay about from one to two months' operating expenses.

Industrials ordinarily require more working capital. In any case, other things being equal, the following elements will usually govern the comparative amount of working capital required.

1. The larger business will require more working funds.

2. During a period of rapid expansion a company will require a much larger supply of ready money, for the money it collects from the sale of goods it has manufactured will ordinarily be less than the cost of purchasing and manufacturing the larger supply of goods necessary for its increasing business.

3. The company that takes longer to manufacture its product will require more working capital, for it will tie up a large proportion of its funds in semi-finished products.

4. A concern that makes various kinds of products will require more capital to keep itself supplied with a reasonable stock of each commodity.

5. Seasonal businesses will need a larger supply of working capital at one time than at another.

6. The more quickly a company can turn over its capital or merchandise, the less working capital it will require.

7. The longer the terms of credit a concern extends to its customers the greater the amount of working capital it will need.

8. The longer the terms of credit it can obtain in purchasing supplies, the less the amount of capital it will find necessary.

9. Greater difficulty in securing raw materials calls for greater working capital, for in such a case a concern must anticipate its requirements and lay in a stock of raw materials and pay for them long before they are sold.

Estimating the initial working capital requirements.—We have seen that at the outset the company needs funds not only to acquire its fixed assets but to get its business started. For example, suppose that a company manufacturing typewriters and selling them on installment payments will be able to sell 100 machines the first month, 200 machines the second month, and thereafter, 300 machines a month. The entire cost of making the machines is \$20 a machine and the administration expenses are \$2,500 a month, the machines selling for \$100 each, payable \$20 down and \$10 a month. An estimate of the amount of funds that will be required to get the business to the point where the cash income is sufficient to take care of the cash outgo may be made as follows:

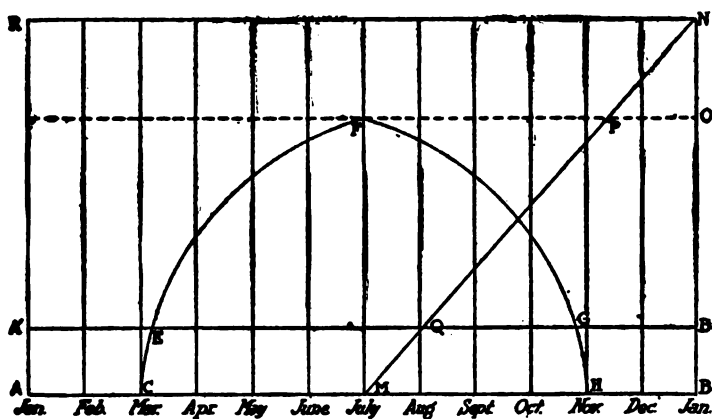
| | <i>1st month</i> | <i>2d month</i> | <i>3d month</i> | <i>4th month</i> |
|------------------------------------|------------------|-----------------|-----------------|------------------|
| Cost of machines.... | \$2,000 | \$4,000 | \$6,000 | \$6,000 |
| Administration ex- penses | 2,500 | 2,500 | 2,500 | 2,500 |
| Total outgo | \$4,500 | \$6,500 | \$8,500 | \$8,500 |
| Initial payments.... | 2,000 | 4,000 | 6,000 | 6,000 |
| Installments | | 1,000 | 3,000 | 6,000 |
| Total cash income.... | \$2,000 | \$5,000 | \$9,000 | \$12,000 |
| Net income (cash)... | -\$2,500 | -\$1,500 | \$500 | \$3,500 |

Thus it will be seen that the company will have a net cash *outgo* for the first two months only,¹ and that if it provides itself with \$4,000 at the outset it will likely have sufficient cash to get started. It ought to be pointed out, however, that in practice a number of heavy initial expenses would have to be added to the outgo of the first few months, among them being the cost of advertising, of arranging agencies, of finding salesmen, training them, and the like. Moreover, in spite of careful planning from an engineering standpoint, both the plant and the product will probably need much readjusting or "tuning up" in the light of actual experience in operation. All this costs money and adds nothing to the visible assets. Since the company will have insufficient operating revenue to meet these costs, they will perforce be met from capital funds, i.e., funds acquired through the sale of stock or bonds or furnished out of

¹ Note that while the company has a net cash outgo of \$4,000 during the first two months, it actually makes a profit of \$19,000. This is figured as follows: Sold 300 machines at \$100 each = \$30,000 gross income (\$7,000 received in cash, and \$23,000 represented by accounts receivable). Deduct \$11,000 operating expenses (\$6,000 being the cost of the machines and \$5,000 being the administration expenses) and we have left a profit of \$19,000. Of course, it would be more conservative to deduct, from this profit, a reserve for bad debts and for the expense of collecting the outstanding accounts receivable.

the capital of the proprietors, and the company will consequently treat these costs, at least temporarily, as a capital asset under the name of good-will, organization expenses, patents or the like. Conservative practice, however, looks upon these expenditures as deferred charges to operation, and consequently the capital assets are reduced in value on the books from time to time by making a credit to them and charging profit and loss.

Seasonal variations in working capital.—Many concerns, and especially the trading companies, have at certain periods of the year a larger demand for working capital than at other times. Such concerns keep on hand a certain amount of owned working-capital in order to keep their credit good, and then borrow from banks the additional capital required seasonally. The principle may be represented graphically in the diagram given below:



The months are divided off on the horizontal lines A-B, A'-B'. Distance A-A' is the amount of owned

working-capital and the distance A'-R the total amount of borrowed working-capital. The curved line C, E, F represents the purchases of the concern and the curved line F, G, H represents the course of sales or diminishing stock of goods. The line M, Q, P, N represents the course of income from sales, the income being used for gradually reducing the loans. When the income reaches Q, the firm's own capital will have been brought back into the concern, and when the point P is reached the borrowed working-capital will also be returned. The distance ON represents the profits on the transaction which we may assume are paid out in dividends, thus bringing the company back to where it was at the beginning of the year. It is now ready to start the same cycle over again.

OBTAINING CAPITAL FOR EXPANSION

Capital for expansion.—It is a rule of all life that an organism or an organization never stands still. It either moves forward or moves backward. The process of expansion may be, and generally is, gradual, but there usually are steps in the expansion that call for some form of new financing. The gradual expansion usually is worked out by retaining some of the profits in the business. For a while some of the profits will be used to purchase new machinery, to increase the number of agencies, and the like. Then perhaps will come a time when new buildings or large amounts of new equipment will be required, for the purchase of which a part of the profits of the business will be inadequate. This means that the company will have to obtain a definite amount

of new capital. It may borrow this new capital, or it may raise the money by selling additional stock.

Selling additional stock.—If the company is doing a profitable business, and is distributing fairly large dividends to its stockholders, its old stock usually will be worth more than its nominal or par value. In such a case, it will be comparatively easy for the company to sell additional new stock at par, or even at a premium. Should it desire to do this, the corporation will offer the new stock to the old stockholders, for not only are the old stockholders the most likely purchasers of the new stock, but they have a legal right to purchase the stock before it may be offered to outsiders. This is because each stockholder has the right, if he so desires, to retain his proportionate control in the corporation. Each stockholder will therefore usually be given a negotiable certificate showing his right to subscribe to his proportionate share of the new stock at a price fixed by the corporation. If this price is sufficiently less than the market price of the old stock, as is usually the case, the right could easily be sold by the stockholders to outsiders for whatever it is worth. On the other hand, if the old stock were selling below par and the new stock were offered at par, it is obvious that the right to subscribe to it would have no value. Indeed, in such a case, this method of financing would not be open to the corporation, for no one would pay \$100 a share for new stock of a company whose stock at present outstanding is selling, let us say, at \$80. But the corporation might, with the consent of the stockholders, create an issue of preferred stock with a large enough preference as to dividends to

insure a ready market for it above par. Or the company might borrow the necessary funds, issuing its bonds to the lenders.

BORROWING CAPITAL

Borrowing funds.—One reason that will prompt an established corporation to borrow has been pointed out in the preceding paragraph—the corporation finds this a convenient way of raising money. But there is a more important reason why corporations—and for that matter individuals as well—borrow funds. Borrowing enables the owner to magnify his profits—although by borrowing the owner takes a risk and may magnify his losses. To illustrate, suppose that a company with a capital of \$100,000 is earning 10 per cent on this amount and that its earnings on a larger amount would be at the same rate; if it borrows another \$100,000 at five per cent, the company will make \$20,000 (gross) less \$5,000 paid in interest, or \$15,000 net—which will give the company 15 per cent instead of 10 per cent on its own capital. To make this extra per cent the company takes the *risk*, which the lender avoids. Thus, if the company made only \$5,000 instead of \$20,000 on the aggregate of owned and borrowed capital, it would get absolutely nothing for its trouble and for its own investment—the \$5,000 would all go to the lender.

Where to borrow.—A small merchant who wishes to borrow additional capital usually looks either to his friends and relatives, or to a commercial bank. From the bank, the merchant can expect to obtain only a short-term loan, that is, a loan for three, six or nine months,

although in many cases these loans are renewed from time to time so that in effect they become loans for two, or three or even ten years.¹ Usually, however, the bank will lend only *temporary* working capital to a merchant, to enable him to finance the purchase or manufacture of merchandise until such time as it is sold to and paid for by customers of the merchant. Moreover, a bank will lend money only to a merchant who can measure up to high credit-standards; he must be able to furnish either good collateral or a financial statement showing a sound condition.

The small merchant may also look to his supply houses for some of his capital. They will sell him the goods he requires on credit, and thus in effect lend him part of his business capital temporarily.

If the small merchant wants to borrow money for a year or more, he generally can look only to his friends or relatives, although, as we pointed out above, bank loans are often renewed so many times that they in effect become loans for several years. Indeed, if the merchant owns marketable securities, he will find it comparatively easy to renew a loan secured by that collateral. If he owns real property, he can borrow money from a savings bank, an insurance company or an individual for one to five, ten or, in some cases, twenty years, mortgaging the property as security for the loan. In the same way, fixtures and machinery used in the business might be pledged for a six-months' or a one-year's loan.

The larger merchant not only has all of these sources

¹See H. G. Moulton, "Commercial Banking and Capital Formation" *Journal of Political Economy*, May, June, July, 1918.

of funds open to him, but others as well. Thus, he may borrow money from a discount house by pledging his accounts receivable as collateral. This practice, however, is not looked upon with favor by credit men and bankers, and it is usually a very expensive method of raising funds. It is better and cheaper to borrow from banks, and in doing so the large merchant may often borrow even more cheaply by selling his promissory notes, through note-brokers, to banks in different parts of the country. He will find in practically any large city one or more individuals or firms who do a specialized business as note-brokers.

Borrowing from the investors.—The larger corporations, joint-stock companies and Massachusetts trusts have a much wider market in which to borrow their funds. They are not confined to dealings with friends, creditors, banks, discount-houses and note-brokers. They borrow as well from the general investing public, by issuing bonds or notes and selling them—usually to investment bankers, of whom we shall shortly say more. The investment brokers, in turn, sell the securities to the public.

FINANCING THROUGH BOND ISSUES

Choice of bonds.—Two influences will be brought to bear when a company contemplates the issuance of bonds. On the one hand, the company will desire to give as little as possible; on the other hand, the prospective bondholders will desire to get as much as possible. In the long run, the kind of bond that will be issued will depend largely on the credit of the company and the general

business and financial conditions that exist at the time the securities are brought out. A sound concern, in normal times, will be able to issue, perhaps, an unsecured obligation—a so-called debenture bond.¹ Moreover, the rate of interest will probably be low. In abnormal times the same corporation might have to offer some security—that is, give a mortgage to secure the bonds, and certainly would have to pay a high rate of interest. Ordinarily the security would be given in order that the rate of interest demanded by the bondholders would be as low as possible.² As to whether a mortgage should be given or not, the rate of interest that will have to be paid ought not to be the determining factor. There is a principle, familiar to card players, “keep your trumps to the last.” And so in finance there is, or ought to be, a principle, “keep your best security till the last—till it may be really needed in some period of stress.”

The corporate mortgage.—This last-mentioned principle has, however, been almost entirely neglected in practice. Corporations have in the past sought to sell their bonds as easily as possible, and at as low a rate of interest as possible. To do this they have mortgaged not only what they have had but what they were to get in the future—present and “after-acquired” property. We can readily picture to ourselves the case of a company with a million of clear assets placing an \$800,000 mortgage on its property. It then will have an \$800,000

¹ Notice that in England the word “debenture” is used generally to indicate what we mean when we say “bond.” In America a debenture is an unsecured bond.

² The bondholders would, in effect, sacrifice an amount of income to get some degree of security. See on this point Lyon's *Capitalization*, ch. I.

bond-issue secured by \$1,800,000 of property. The next time the company expands it may need \$1,000,000. It is readily conceivable that its property would have gradually increased in value through keeping some of the profits in the business. Let us suppose its balance-sheet in abbreviated form is as follows:

| | | | |
|--------------|-------------|---------------|-------------|
| Assets | \$2,500,000 | Stock | \$1,000,000 |
| | | Bonds | 800,000 |
| | | Surplus | 700,000 |
| | <hr/> | | <hr/> |
| | \$2,500,000 | | \$2,500,000 |

The net value of the assets is \$1,700,000. A mortgage of \$1,000,000 would have relatively a better equity back of it than the original mortgage had at the time it was issued.¹

But under the rule familiar to lawyers that "priority in time gives priority in equity," the first mortgage would be a first lien on all the property and the second mortgage would be a second lien.

Now finance is not all a matter of balance sheets. The order of claims against the assets ordinarily determines the order of claims against the earnings and while the assets appear to be sufficient to protect both issues of bonds, there may be some question about the adequacy of the net earnings to meet the interest charges on both issues. The second issue, therefore, would probably have

¹ The use of the terms "equity behind" a mortgage, and "security behind" a mortgage can be understood from their application to the problem in hand. The security behind the first mortgage bonds is \$2,500,000, and the equity behind them is the net value of this \$2,500,000 or \$1,700,000. If \$1,000,000 is added to the assets and a second mortgage of \$1,000,000 is placed on the property, the security behind the first mortgage would be \$3,500,000 and the equity would be the net worth of that security or \$2,700,000. This "equity" in turn would be the "security" behind the second mortgage, whose protecting equity would be the net value of this latter "security," or \$1,700,000.

to yield a higher rate of interest than the first in order to make up for the risk.

Modern bond-financing.—The difficulty presented in the foregoing section has given rise to the modern method of creating large refunding issues of bonds.

Suppose the company referred to wanted to use the \$1,000,000 to acquire a plant of another company. The moment the plant was acquired, it would become subject to the lien of the first mortgage under the provisions of that mortgage's "after-acquired" clause. One exception to this rule—and this exception is made to do yeoman's duty—occurs in the case of so-called "purchase money" mortgages. Thus if the company acquired the plant from Company B and gave Company B a mortgage for \$1,000,000 their mortgage would be a first lien on the company's new property and the other mortgage, i.e., the one first issued for \$800,000, by virtue of its "after-acquired" clause, would be the second lien.

Instead of giving a \$1,000,000 mortgage in payment for the plant, the company—let us now call it Company A—would perhaps create a \$5,000,000 mortgage and would call it "first and refunding." The mortgage then would be of the variety known as "limited open-end."¹

¹ Corporate mortgages are ordinarily made out to a trustee—usually a trust company—who holds the mortgage for the benefit of anybody who may become the owner of one of the bonds mentioned in the mortgage. If all the bonds are issued at one time, the mortgage is said to be a "closed-end" mortgage. If an indefinite number of bonds may be issued from time to time, the mortgage is said to be an "open-end" mortgage. If more than the original issue may be made, but not to exceed a stated amount—in the example above, \$5,000,000—the mortgage is a "limited open-end" mortgage. The open-end and limited open-end mortgages contain "restrictions" or "escrow agreements," the purpose of which is to protect the bondholders who already hold bonds from the issuance of additional bonds under the same mortgage and entitled to the same rights as

One million dollars worth of bonds, secured by this mortgage, would be used to acquire the new plant. Then a part of the bonds, secured by the same mortgage, would be used to refund the old \$800,000 issue. Notice is sent to the holders of those old bonds, inviting them to exchange their bonds. As the bonds are exchanged, the old bonds are deposited with the trustee named in the refunding issue; and to the extent, therefore, that the old bonds are refunded, the new issue participates in the lien of the first mortgage on the old property. Gradually, as the old issue is retired, the new issue becomes a real first-mortgage on all the company's property.

Advantage of large issues.—One great advantage of a piece of financing of this kind is that it replaces small underlying bond issues with one large issue, widely distributed and well known. It is easier for a holder of a bond secured by such a mortgage to sell or hypothecate it, since there will likely be frequent transactions in it on the exchanges and its value will therefore be well known. This, and the advantage that the refunding issue is likely to be a first lien on a more important part of the company's property than that covered by the underlying mortgage, is the argument advanced to the old bondholders to induce them to exchange their old bonds for the new bonds.

Financing subsidiaries.—When one company owns all or practically all of the stock of another company,

the holders of the earlier issued bonds without in some way adding to the company's property and earning power. Under various modern mortgages, bonds may be issued from time to time protected by the same mortgage, but with different rates of interest, different maturities and certain other differences.

the principle of wholesale financing is applied in raising funds for the subsidiary. To have the subsidiary issue its own bonds would involve two disadvantages. In the first place, the issue would be small, would have a narrow market, would not be well known, and therefore would require for flotation a high rate of interest. Moreover, the issue of bonds would jeopardize the parent company's interest in the subsidiary, since the bonds would have claims better than that of the stock with which the parent controls the subsidiary. To avoid these difficulties, the parent company usually issues some of its bonds under its large refunding mortgage and advances the proceeds to the subsidiary, taking the latter's notes and pledging them as extra security for the refunding bonds.

In some cases, however, it is better to have the subsidiary sell its own bonds. Thus, if the subsidiary company's credit were much stronger than that of the parent company, it could probably borrow, even on a small issue of bonds, on better terms than could the parent company. And if the parent company were simply to guarantee to pay the bonds of the subsidiary, in case of the latter's default, still lower interest-rates could be obtained. The advantage to the parent company would be that the subsidiary company, not having to pay as much interest, would have a larger surplus to distribute in the form of dividends to its stockholder, the parent company.

Regulating the income on bonds.—Usually, when bonds are issued by a corporation, they bear a fixed rate of interest—as 4 per cent, 5 per cent, or 6 per cent. This feature of the bond appeals to the conservative investor, who likes to have a certain fixed income every

year. But sometimes the corporation feels (usually after a reorganization) that it does not want to take the risk of being compelled to pay the fixed amount each year. The corporation may not be quite certain that it will be able to earn or pay the full amount of interest, and if it does not, the holders of ordinary bonds can sue the corporation. So the corporation will ask the investors to share the risk of earnings by accepting income bonds. The holders of these bonds receive only so much of the stipulated rate of interest as is earned. The corporation need not fear that it will be unable to meet its interest requirements, for it need pay only what it earns and no more. While this is an ideal form of obligation for a corporation to incur, there are few investors who would be attracted to such securities. Indeed, we find income bonds issued almost exclusively by reorganized companies to security holders of the former insolvent company, who have little choice in the matter. On the other hand there are some companies so anxious to sell their bonds that they not only agree to pay the bondholder a fixed annual interest but a share of the profits in addition—by issuing so-called *profit-sharing* or *participating* bonds. Such bonds, however, are usually issued only by companies whose credit is not strong enough to interest conservative investors in debenture bonds and who have not sufficient property to support a mortgage-bond issue. Such companies, therefore, appeal to the speculative investor by offering profit-sharing bonds.

The amount of bonds that can be sold.—Large concerns, at any rate, are not nearly so much interested in the relation of the amount of bonded indebtedness to the

value of the assets securing it as they are in the relation of the fixed charges (i.e., the interest) growing out of the indebtedness to the net income available for the payment of these fixed charges. It can be shown mathematically that the more stable the gross income of a company, the greater can be its financial risk.¹ Railroads and public utilities generally can stand larger bond issues than industrials. The industrials can stand large issues in proportion, as we have seen, to the stability of their gross income. This stability may be increased by good management, and will depend on whether the company is manufacturing a basic necessary or a luxury, and on whether it enjoys a complete or partial monopoly.

¹ Financial risk is the ratio of financial fixed charges (to be differentiated from other fixed charges such as taxes) to the net income. The mathematical demonstration, which the author has used for a number of years in class demonstration, but which as far as he knows has never been published before, is as follows:

Let a = gross income in normal year.

b = decrease of gross income in the poorest year.

m = operating ratio (ratio of operating expenses to gross).

x = financial risk, i.e., the largest possible risk that can be met in any (i.e., the poorest) year.

| | <i>Normal year</i> | <i>Poorest year</i> |
|----------------|--------------------|----------------------|
| Gross income | a | $a - b$ |
| Operating exp. | am | $(a - b)m$ |
| Net income | $a - am$ | $(a - b) - (a - b)m$ |
| Fixed ch'ges | $x(a - am)$ | |

The quantity $x(a - am)$ is unknown, since one term is unknown. Whatever it amounts to, it is by its very nature constant, i.e., it will not vary from year to year. It should not be larger than the net income in the poorest year, but it may be as large; in other words, it may be equal. Thus $x(a - am) = (a - b) - (a - b)m$. Factoring and solving for x :

$$x = \frac{(a - b)(1 - m)}{a(1 - m)} = \frac{a - b}{a}$$

That is, the financial risk (x) may be equal to the ratio of the gross income in the poorest year ($a - b$) to the gross income in the normal year (a).

When to sell securities.—We have discussed the question of whether bonds, or stock, shall be sold. We may now pause for a moment to consider conditions outside the business that will have some effect on the ability of a company to market its securities. In brief, the time to sell securities is when money is “easy”—when it is plentiful. There are two cycles of business conditions that must be considered—the absolute and the annual. Absolutely, we find periods of prosperity when money is plentiful and when all businesses borrow in order to get the advantage of easy rates and also to get advantage of the general prosperity. Credit soon becomes distended, and, in the days before the Federal Reserve System was in existence and able with its system of rediscounting¹ to make the currency elastic, frequently broke under the strain. We then had a panic, followed by a period of depression during which securities of all kinds were difficult to sell.

In the annual cycle, we find early in the calendar year a relative plenitude of funds made available, through the end-of-the-year distribution of business profits, the laying-up of funds by farmers, and the lull in business following the holiday season. This is ordinarily the time of the year when most security issues are launched. Then comes the seed period and spring revival, followed by another lull, after which comes the great fall demand for funds to move the crops. Then as the lakes freeze up, and as business gradually slows up, following the cessation of productive farm work, funds begin to pile up again till the next profit-dividing day—January 1.

¹ See Chapter on Banking.

LONG-TERM AND SHORT-TERM BONDS

Nine hundred and ninety-nine year bonds.—It was quite natural twenty or more years ago, when corporations could get their capital at $3\frac{1}{2}$ and 4 per cent, for them to make contracts for ninety-nine years or even for nine hundred and ninety-nine years.

When capital grew more expensive, corporations were unwilling to commit themselves to long-term contracts at high rates. Let us suppose, as was frequently the case, that some kind of a contract must be made, either because an old bond issue has matured and must be renewed or because the corporation has begun some form of expansion or improvement and must see it through, unless it is willing to sacrifice large sums of capital already invested. A railroad, for example, may have invested millions in a new branch, and, until more millions are spent, the road will not be fit for operation. If it holds up construction, the work thus far done will yield no income, though interest charges and depreciation will continue to demand attention.

Redeemable bonds.—When a company finds itself in such a predicament it may do one of two things: sell high yielding bonds with the redemption feature, or sell short-term notes. Which of these courses will be pursued will depend largely on circumstances and on the directors' estimate of the probable duration of the period of high interest-rates. If interest rates are likely to be high for a number of years, say more than five, the company will probably sell six per cent bonds, with a clause permitting it, whenever it chooses, to hand the

bondholders back their money, plus a premium. When interest rates drop, the company will sell a new issue with a lower rate and out of the proceeds of these new bonds it will redeem the older high-rate bonds. While this operation may appear to be expensive, it is much cheaper in the long run than paying six per cent interest for a number of years in the future.

The profitableness of redemption can be seen from working out a concrete example. A company, let us say, has a \$1,000,000 issue of six per cent bonds that have seventy-five years to run. It can redeem these bonds, but the mortgage provides that the price at which they may be redeemed is 110. This means that the company will have to pay \$1,100 for every \$1,000 originally paid by the bondholder. Interest rates, however, are lower, so that now the company can sell bonds bearing interest at 5 per cent. So it issues \$1,100,000 of 5 per cent bonds due in 75 years and with the proceeds of the sale redeems the 6 per cent bonds. The annual interest now is \$55,000, as compared with \$60,000 formerly paid. This is a saving of \$5,000 a year, or \$375,000 in 75 years, disregarding interest on the interest saved. This offsets the \$100,000 premium paid to redeem the old bonds, and saves the company enough to pay a large part of the original debt.

Short-term notes.—But instead of issuing redeemable bonds, the company may decide to issue short-term notes, which may at their maturity be paid off with the proceeds of a bond issue, if interest rates are lower, or with the proceeds of a new note issue if interest rates are still high. Now a short-term note is practically a

bond. In fact, there are some securities that are called bonds that are really short-term notes, and there are some notes that are more like bonds. It's all in the name. Out West, for example, they call the paper that is given to evidence the debt secured by an ordinary real-estate mortgage a note. Farmer Jones gives his notes and mortgage, for example, to secure the \$5,000 he borrows from the bank. In the East, the term used is generally "a bond and mortgage." But the note and the bond, West and East, are just alike.

Down in Wall Street, when you speak of a note, the broker or other man of financial affairs will immediately picture to himself a debt-evidencing instrument that will come due in less than ten years; and when you speak of a bond, he pictures to himself a debt-evidencing instrument that will come due in ten years or more after it is issued. That is the only practical difference between the bond and the note. And still, some companies call their ten-year debts "notes"; and others call their five-year debts "bonds."

Just as there are many kinds of bonds, so are there many kinds of notes. We can have mortgage and debenture; income and participating and all the other "fifty-seven varieties" of notes. But because the note is not going to be outstanding very long, corporations usually make them plain, straight interest-bearing secured or unsecured obligations. If a company is in very good standing, it may issue simple debenture notes. These notes then are just like an ordinary promissory note, though, indeed, they will contain a great many more words, most of which will be used to tell what will happen if the

company fails to pay the interest on the notes or the principal when it falls due. An example of these debenture notes is the small issue recently brought out in Cleveland of the Champion Hardware Company. These notes contain a clause that it is wise to look for in all debenture notes—a clause providing that no mortgages may be placed on the company's property while any of the notes are outstanding.

More commonly, however, the short-term note will be a collateral trust note; it will be secured either by a lot of free stocks and bonds owned by the company—that is, stocks and bonds of subsidiary companies that have not been pledged under some mortgage—or it will be secured by a lot of bonds bearing a lower rate of interest than the notes, which bonds the company hopes to be able to sell when the money market is easier—when interest rates are lower.

EXTINCTION AND REFUNDING OF INDEBTEDNESS

Extinction of indebtedness.—When a company issues short-term notes it should never lose sight of the maturity of those notes. Some provision must be made to pay off the noteholders, or they may force the company into a receivership. If the notes are issued for temporary purposes, as to provide the company with sufficient working capital to finance the purchase of an unusually large amount of materials required for the completion of a large special contract, the money to pay off the notes should come from the payments received on the contract. This was the practice followed by a number of companies that required additional working-

capital for the manufacture of large quantities of munitions in the Great War. On the other hand, if the money originally was borrowed to finance some permanent additions, and short-term notes were issued simply because interest rates were too high to warrant a bond issue, there is no good reason, except perhaps ultra-conservatism, why the debt should be entirely extinguished. The fact that it was profitable for the company to borrow in the first place would ordinarily be sufficient reason for continuing the debt. Under these circumstances, then, the company will pay off the debt, or a portion of the debt, only if it has on hand funds that it cannot profitably use in the business, and the remainder of the debt will, if possible, be continued. If interest rates are still high, new notes will be issued for another short period, or the old noteholders will be asked to extend the notes. If they do, the company will save a large part of the trouble and expense of selling new notes.

Bonds, too, must be taken care of at maturity. In some cases, where the earnings of the company are stable, and where the plant is not subject to accident or serious danger or neglect, as in the case of a railway or gas company, the bonds are entirely refunded and the debt remains practically undisturbed. That is to say, new bonds are either exchanged for the old bonds, or new bonds are sold and the proceeds used to take up the old bonds. A company is justified in doing this providing (1) the security back of the bonds is unimpaired; (2) it is still more profitable for the company, from the stockholders' standpoint, to borrow than to sell additional stock, and (3) the company has on hand no ex-

cess of funds that it cannot use profitably in the business.

The bondholders' interests must also be considered. And indeed, the bondholders will usually insist that the debt be reduced gradually during the life of the bond issue. This is particularly true when the borrower is an industrial company and where there is danger of shrinkage in value of the property through accident or improper maintenance. And in the case of extractive businesses, such as coal mines or lumber, the bondholders usually require the company to wipe out the debt entirely within the life of the bond issue and proportionately at least as rapidly as the coal is mined or the lumber cut.

Sinking funds and serial bonds.—In the above cases, the mortgage, which defines the bondholders' rights, would require the company to reduce the debt gradually. This may be done in one of two ways: (1) by making a certain part of the bonds mature each year during the life of the issue (in which case the bonds would be called serial bonds), or (2) by requiring the company to lay aside, usually from profits, a fund sufficient to redeem a portion of the bonds each year. This sum may be a fixed amount or may be in proportion to the earnings of the company or in proportion to the amount of property used, as so much per ton of coal mined. The funds will then either be used immediately to redeem a portion of the outstanding bonds or they will be accumulated and invested in banks or other securities and used to pay off all the bonds at maturity. The former method is more economical and much safer, particularly for the bondholders.

Conversion of bonds.—Another method of extinguishing a debt is to exchange it for an ownership-interest in the company. Of course, this cannot be done without the consent of the bondholders or noteholders. Nor do the owners of a profitable enterprise like to do this if they can extinguish the debt in any other way. A company, however, that cannot offer the bondholder sufficient safety must compensate him in some other way. This may be done, as previously indicated, by making the bonds participating or profit-sharing. Or the company may make the bonds convertible; that is to say, it may give the bondholder the right to exchange his bonds for the stock of the company at a fixed rate of exchange. If the company's earnings afterwards increase considerably, the stock will become more valuable and the bondholder will profit by converting his bonds. This operates greatly to the advantage of the bondholder, and to the disadvantage of the corporation and its original stockholders; for if the corporation's business grows successfully, the convertible-bond-holders can share in the profits, by converting their bonds, without taking any of the initial risk—and if the company is unsuccessful, the holder of convertible bonds will keep his bonds and enforce his rights just as would any other bondholder or creditor. As a general rule, then, a corporation should not issue convertible bonds unless it is compelled to do so in order to make its bonds sufficiently attractive to invite the attention of investors.

SELLING SECURITIES

Methods of selling securities.—The corporation has several methods by which it may sell securities to provide

itself with initial capital, or later with capital for expansion. Of course, as we have already indicated, a large part, or all, of the capital necessary for expansion may come from profits not distributed to shareholders. If an established corporation sells new stock, it must remember that stock is the basis of control as well as of income. A legal rule has sprung up to the effect that when new issues of stock are offered, they must be tendered first to the old stockholders in proportion to their old holdings. But, aside from this rule, it is generally advantageous to go to the old stockholders first. They know the enterprise and they have something at stake that makes them anxious to see the new offering go through successfully. Likewise, although in the case of bonds, there is no such obligation involved, bonds are frequently offered to the stockholders before a general public offering is made.

There is also a growing tendency among corporations to offer stock to employees and others connected with the enterprise. Thus we find such corporations as United States Steel offering shares to employees at prices less than the market. It does this largely because employees who have a proprietary interest in the business are likely to try to increase the profits by working more diligently. Acting on a somewhat similar theory, some corporations attempt to sell as much of their stock as possible to customers. Two wholesale and manufacturing drug companies successfully sold their stock to retail druggists and in so doing created a potential market for all their products. The Pacific Gas and Electric Company and many other public utilities have sold shares to consumers of gas and electricity and thus have won

their co-operation, as well as the good-will of the governmental authorities, particularly needed on those occasions when rates are unduly lowered or heavy restrictions placed upon the public utility.

In making a general public offering, however, it is unusual, as well as unwise, for a company to go direct to prospective purchasers. A banking concern should be used. It will know where to find the buyers and it will render aid in advising the kind of security to offer and the time and conditions under which the offer should be made.

Underwriting syndicates.—When a company needs money, and is entitled to it from its economic position, it may assure to itself the sale of its securities by having the sale underwritten. Usually, in modern days, a banking house will actually buy the securities first, and then form and manage a syndicate of banking houses to assure their sale to the public. The participants (members of the syndicate) leave the entire management of the syndicate to the manager, and will be satisfied to get their final statement of profits.

Since the time during which the securities are sold, as well as their ultimate sale, is usually important, the syndicate agreement will ordinarily provide that the manager may make "calls" on the participants in proportion to their shares. Thus if the syndicate has agreed to sell the entire lot in a year in equal monthly instalments, it may be impossible to sell any during the first month; the manager will then call on the participants to advance an amount equal to one-twelfth the amount of their subscriptions. At the end of the year, if all the securities are

sold, the participants will get their money back and a share of the profits proportionate to their subscriptions. If some of the securities remain unsold, the participants will take them at the syndicate price.¹

The expenses of the syndicate include the costs of the various forms of advertisements and the other expenses of the manager. These latter may include fairly large sums for "supporting the market."

The right and duty to support the market are provided for in the syndicate agreement. Thus, if the securities are sold on any of the exchanges, and they fall in price below the price at which they are to be sold to the public, the manager may order brokers to buy the securities to raise the price.² The brokers' commissions, of course, are a legitimate expense of the syndicate.

Stock exchange as an aid.—The manipulative use of the stock exchanges indicated in the previous section is undoubtedly a social detriment. Markets have been "supported" at levels which the intrinsic values of the securities do not warrant.³ But the stock exchanges do perform a great service in establishing prices that can be used as the basis of sales and hypothecations.⁴

Prospectuses.—Securities ordinarily are brought to

¹ The "syndicate price" is the price at which the manager turns the securities over to the syndicate, and is usually a fraction of a point more than the corporation receives for its securities. The syndicate gross profits are the difference between the syndicate price and the price at which the securities are sold to the public.

² See Gerstenberg's *Materials of Corporation Finance*, pp. 405 and 769.

³ See the Pujo Committee's Report on the California Oil Company and the subsequent course of that company's stock. (Gerstenberg's *Materials of Corporation Finance*, p. 435.)

⁴ See Emery's *Speculation on the Stock and Produce Exchanges* and Brace's *The Value of Organized Speculation*.

the attention of prospective buyers through prospectuses or bond circulars.¹ In England and Canada, when a public offering is made the prospectus must be filed in public offices and the information it must contain is prescribed by law.

A prospectus should contain a complete statement of all the obtainable facts necessary to aid the prospective purchaser in estimating the worth of the securities. The nature of the business, the past earnings, the careers of the managers, the nature of the company's property are essential facts. If the prospectus goes beyond this and deals with the profits of like concerns, different in everything but the general nature of the product, or if the cheap persuasion of the fire-sale clothing merchant is indulged in, the concern immediately loses caste and becomes the child of a "wild-catter." Respectable bankers let the facts speak for themselves. Perhaps no other selling device is so reprehensible as the prediction of what will happen. There used to be a very wide margin drawn by the law between statements of facts and statements of opinion. A false statement of facts could be used as the basis of criminal prosecution for false representations; statements of opinions were privileged—the law being that every person is entitled to his own opinion. But the courts are beginning to draw a closer line, and a statement of opinion that is calculated to get a person's money, but that is not honestly made, may be made the basis of a suit—at least under the decisions of the United States Supreme Court.

¹In practice a prospectus deals with a new company, while a bond or stock circular advertises the issues of new securities of an established company.

"Catch phrase" financial advertising.—It is estimated that about \$100,000,000 a year is lost in the United States through "investments" in fraudulent stock-jobbing schemes. This \$100,000,000 does not go into the pockets of stock-jobbers to be lavished on lobster and champagne parties as is popularly supposed. The waste is greater than this. A large part of the \$100,000,000 goes into stenographer's services, mail service, newspaper and other printing, all of which expense is an economic loss. How much better to have this \$100,000,000 in legitimate enterprises!

It was formerly held, in some quarters—and the misapprehension persists even today—that the legitimate jobber in stocks and bonds must use none of the devices open to the vendors of general merchandise. The result has been that the "fake" brokers have had a monopoly of the advertising in the financial field. Gradually, however, even the better-grade houses have been getting away from the old, conservative and often profitless advertising that consists merely of inserting a professional card. Such bait never caught a fish; investors are hooked by the "catch phrases"—such as "A competency for old age," "Let your dollars help your brains," "Diversify your investments," and the like—that are being wisely used by the progressive houses.

"Blue sky" legislation.—So much money year after year has been wasted in the purchase of worthless securities that in 1911 Kansas passed a so-called "blue sky" law for the protection of its investing public. As the name of this law indicates, it was intended to keep stock salesmen from selling pieces of "blue sky," blue sky being

for many years the figurative designation of a worthless security. Many States since then have passed similar laws, and these have been held constitutional by the United States Supreme Court. Generally, the laws provide that securities can be sold by licensed vendors only, and that the securities themselves must be passed on by a licensing board.

Money-raising and money-making.—This perhaps is the place to say a word about the difference between money-making and money-raising.

Money-making is usually the result of either painfully assiduous and intelligent effort or of what seems to be fortuitous luck. Of the former, little need be said beyond calling attention to the fact that practically all our industrial plants of huge success are oaks that have grown from small acorns. As to the latter, it is well to point out that the "fortuitous luck" seems to be a matter of habit with some people. Perhaps there is neither luck nor fortuitousness in the good fortune of the "idle rich." The fact is, that some people intuitively sense the strategy of industrial evolution. They make contracts that involve the large demands of the moment—war contracts, railroad contracts, shipping contracts, and the like.

There is another entirely different activity, to be differentiated from laborious production and selling and from big-scale trading such as is involved in selling "controlling interests" and the like. This activity is money-raising. Some men have the happy faculty of inspiring confidence and of being able to raise money for this or that enterprise. In the long run, it will be found that

these men give effort to money-raising that is not out of proportion to the success they attain. This effort, to be sure, may seem to be the pleasurable occupation of being a club member, being a "social climber," or the like. At any rate the successful money-raiser is likely to have personal qualities that make him attractive to his fellow human-beings in a way that is to be envied.

Raising money, of course, is not the whole of the matter. If one who raises money easily does not know how to use it, the faith people have in him will soon be lost. If to his money-raising ability, he adds the ability to choose associates who can make good use of his money, his success will continue. This two-fold ability to raise money and to use it properly is the very basis of the success of the so-called "Wall Street Man."

CHAPTER VIII
FINANCING
(*Continued*)

MANAGEMENT OF INCOME

Control of income.—Gross income depends upon the number of units sold and the price per unit. Both these elements are matters for the marketing expert rather than for the financial expert.

The financial success of an enterprise, however, depends to a considerable extent upon the gross income. It must be large enough not only to pay the operating expenses of the business, to pay a fair return on the capital invested and to provide a fair margin to compensate the projectors of the enterprise, but also properly to maintain the plant and to insure the future success of the business. In the case of an enterprise with wasting assets, as a coal mine, the gross income must also provide a surplus sufficient to return to the owners the capital invested.

The first demand on income is for operating expenses. The most important problem to be considered under this head is the question of proper maintenance of the plant and the introduction of betterments that may reduce operating costs.

Maintenance.—Maintenance is to be classified into "present" and "deferred." Present maintenance is provided for in the actual expenditures for current repairs

and replacements. Deferred maintenance is cared for by deducting from the income an amount for depreciation to take care of gradual wearing and tearing of property that cannot economically be repaired or replaced within the financial period. The amounts so deducted are placed in reserve accounts. This prevents the directors from regarding that part of the income as available for distribution as dividends and compels them to keep it in the concerns to enable the repairs to be made in future financial periods when they should be made, without, however, appearing to be a heavy financial burden during the year in which they are made.

Whether or not betterments should be made is a simple question of economic selection. If a machine, for example, can reduce operating expenses by dispensing with the labor, say, of five men, the machine ought to be installed, if the interest on the capital cost plus the costs of maintaining the machine are less than the wages of the five men. Money spent on other terms for a capital asset is not economically invested.

Taxation.—Before the day of public regulation, public expenses—except in war time—were small, and taxes fairly light. But the nation and the States and even the cities have extended their scope of operations, have required more money, and have therefore required business men to take taxes into consideration when making financial plans. Of course, the debt of the Great War will be with us for a long time and taxes, therefore, are likely to be heavy for some time in the future. Every business man should understand his financial obligations to the Government. This is not the place to explain these obligations

at length. The State taxes, license fees, and other burdens must be studied not only as to the time when paid, place where paid and by whom paid, but also as to the amount to be paid. Frequently the corporate franchise taxes depend on net earnings derived from operations within the State. To calculate these requires no little skill and time. The law should be read carefully, judicial interpretations examined, and then calculations should be made that will be honest but which at the same time will not impose any greater burden than is intended by the law.

The Federal income and excess profits taxes can be calculated only by one who has made a careful examination of the laws and regulations and who understands accounting principles.

SURPLUS AND DIVIDENDS

Creation of surplus.—The aim of business is to make profits, and in the ordinary course of making and selling goods or services, profits should accumulate. If for the present we restrict our attention to the corporation, we may inquire if there are any ways in which a surplus may be built up other than through current operations.

A surplus may also be created through the reappraisal of some of the company's fixed assets or through a sale of them at more than the value at which they have been carried on the books. A surplus may be created through the donation of an asset or of stock, as when a promoter buys all the stock of a company, pays for it with a mine or a patent and then donates a part of the stock in order that it may be sold as treasury stock below par. So, too,

a surplus may be created by the sale of stock or bonds above par, as in the case of the sale of bank stocks. Still another method is to convert unnecessary reserves, such as reserves for depreciation which prove too large, by transferring them to the surplus account. Moreover, a consolidation may start off with a surplus inherited from the constituents of the consolidation.

The fundamental idea of a surplus is an excess of value beyond what was originally contributed by the proprietors. In a corporation, then, surplus is most easily conceived of as the difference between the assets on the one hand and the true liabilities plus the reserves plus the outstanding capital stock on the other hand.

Law of dividends.—American law looks at the surplus exactly as it is described in the preceding paragraph. The only question it asks, before passing on the legality of a dividend, is, Does the balance sheet show a surplus? If it does, a dividend may be declared, quite irrespective of the method by which the surplus was created. In England the question asked is, Does the income statement show a surplus? In England, for example, a company may have lost money for a long time and impaired its capital; still, when a fruitful year arrives, a dividend may be paid from its profits without first repairing the previous inroads into capital. In America, however, such inroads would have to be made good before a dividend could be declared.

Expediency in payment of dividends.—It does not follow that simply because a company has a surplus and legally may declare a dividend, that it is the best financial practice to do so. Important practical considerations

are involved, and each of these considerations must be carefully weighed.

Manifestly, it would be foolish if not iniquitous to pay a dividend if the company's only surplus was derived from the sale of stock or bonds at a premium. Money received in this way is intended to be used for capital purposes—for buying land, or buildings, or machinery,—and should be consistently retained for those purposes. Likewise, a surplus derived from a revaluation of assets should not be used for dividends, for that kind of surplus is too uncertain. Who may say that the asset is worth more than was paid for it until it is sold? And when it is sold, may not this imaginary surplus disappear? Besides, if there is appreciation in certain assets, the appreciation is likely to be offset by unrecognized depreciation in other assets. The most conservative practice is not to create such a surplus, but if it has been created, it should be kept separate from the rest of the surplus and disregarded entirely when considering dividend payments.

A surplus derived from the sale of assets for more than their book value may be used for dividends—though, in declaring the dividend, the source should be made known to the stockholders—if the entire proceeds of the sale are not needed for the purchase of other assets to replace those sold. Donated surpluses should be used for the purpose for which they are contributed—selling stock below par—and not for dividends.¹

¹ See Dewing's *Corporate Promotions and Reorganizations*, p. 549 et seq. The theory is that a promoter buys all the stock of a concern for a patent or a mine—this makes the stock full paid. Part is then donated back, and this under the law may be sold at less than par. If a promoter pays a dividend out of this kind of a surplus and leads prospective purchasers to believe that the dividend has been earned, he is guilty of fraud.

Surpluses accumulated out of the earnings of a number of years are the usual source of the huge extra dividends—the “melons.” It is perfectly proper to “cut melons,” but they should not come as a surprise. A “melon” is apt to be preceded by a long period of low dividends during which the directors have surreptitiously bought up a lot of stock on which they get the income from the sudden declaration of the extra dividend. Surpluses inherited from the constituents of the consolidation should be studied as they accumulated in the operation of the constituent companies.¹

In the second place, the directors are bound to look out for the welfare of the company. The company may be making huge profits, but if it needs the funds thus stored up to push its own business, the dividends may be withheld.² In the third place the interest of the stockholders should be served and their interests demand regular and early payment of dividends.

Dividends and stockholders.—It can be shown with mathematical precision that the interest for the first twelve to fifteen years on a 5 per cent or a 6 per cent bond is worth as much as the rest of the bond, principal and interest, no matter how long the bond has to run. On this principle it can readily be shown that dividends

¹ Accumulated surplus may also be the result of converted unnecessary reserves, or of the writing up of a surplus by writing on the books the value of the assets that theretofore had been charged to expense.

² Ordinarily the declaration of dividends, from a legal standpoint, rests with the directors. They cannot be compelled to declare dividends, unless the company has covenanted with its stockholders, as it sometimes does with the holders of preferred stock, or unless it can be shown that in withholding dividends the directors are committing fraud on the minority stockholders who are powerless to remove the self-serving directors.

paid now are worth a great deal more than the promise of dividends to come. Hence, the stockholder's interest demands immediate payment.

Moreover, the stockholder desires regular payments. Much better is it to pay regularly 5 per cent a year for five years than an aggregate of 25 per cent in five years in spasmodic declarations. The former policy will mean generally a higher level of market value, freedom from suspicion of manipulation, and will in general denote a more intelligent managerial policy.

Stability of dividends.—The much-desired stability of dividends can be achieved partly as a matter of general business policy—stimulating sales and reducing operating expenses in dull times, but chiefly as a matter of financial policy. In the first place, a company should gradually build up a fund for this very purpose, the usual name for such a fund being “Dividend Equalization Reserve or Fund.”¹

In the second place, when accumulated surplus or the equalization reserve grows too large, an “extra” dividend may be declared. Labelling the dividend “extra” calls attention to the fact that the dividend need not be expected at regular periods. Such a dividend, moreover, should be declared only after due notice has been given to the stockholders, otherwise manipulation may be charged, even if the suspicion is unfounded.

Reserve policies.—But now we must return to the relation of dividend payments to the welfare of the company.

¹Since a conservative, well-managed company can usually borrow when necessary, the setting up of a reserve without the actual setting aside of a fund will be sufficient.

It is proposed to declare a dividend because the company has a surplus from which the dividend can be declared. The question now arises, Should it be paid. The directors ought first to inquire whether all the assets are valued at or below their true value. A plant five years old may be carried on the books at the original value though it may have lost a good part of that value through wear and tear. If such has been the case a depreciation reserve should be set up on the liability side of the balance sheet and a corresponding diminution should be made in surplus account.¹ Some of the accounts or notes receivable may be doubtful or quite uncollectible. To obviate this difficulty a reserve may be set up for bad debts.

If the business is subject to any hazards that may reduce its assets, reserves may be set up against these hazards or contingencies. Whenever a loss so provided for is actually sustained, the asset affected is written off, the reserve is reduced and no necessity will then arise for reducing the surplus or even for setting up a deficit account on the asset side. Beyond this it may be wise to go on with the setting up of reserves for special purposes, as for working capital and expansion—to insure the retaining of a certain portion of the profits in the business and to prevent the use of all the cash and surplus for dividends—or for other special purposes, such as for pensions for employees.

¹ When through the failure of earnings in past years, the capital has been impaired and the payment of dividends is impossible under the law, the creation of a fictitious surplus is sometimes attempted by writing up the assets, by creating a fictitious asset such as goodwill, or by reducing the capital stock.

This question is treated at greater length in the chapter on accounting.

Dividends and cash.—After the assets have been taken care of, there still remains the question of whether the company can spare the cash. The answer to that question, of course, must be sought in the relation of cash assets to current liabilities. Unless the company has sufficient cash to meet its immediate debts and to take care of such demands as are likely to arise, the directors will do well to postpone the dividend or to pay it in some way other than in cash. If the company has large tax payments to meet, it will do well to keep cash for them. Or if the company's business is growing rapidly it will find more working capital necessary and will act wisely by postponing large cash dividends.

Scrip, stock and property dividends.—A company that has a large and rapidly accumulating surplus, but needs all the cash it can get, may elect to pay its dividends in scrip, stock or property. Scrip is nothing other than an unsecured interest-bearing note. The stockholder may sell it, and thus in effect get his cash dividend immediately. Stock dividends are used when a company has a large earning power, but needs its cash for the present. The effect is gradually to spread the profits over a large area of stock and thus to make dividends nominal and the stock worth nearer par. It is generally found, for example, if a 14 per cent stock sells at 180, all other things being equal, a 7 per cent stock will sell at par. In such cases it will be wise to give the stockholders, through a stock dividend, two shares of stock in place of one and then to pay 7 per cent dividends on both.

Property dividends are used in unusual cases. Thus in the Great War a number of powder and ammunition com-

panies had purchased large amounts of Anglo-French bonds which they did not wish to keep permanently; accordingly, they paid out these bonds in dividends.

CAPITALIZATION

Capitalization and recapitalization.—In discussing the question of stock dividends in the previous paragraph, we hit upon the very kernel of the question of capitalization. Everybody has heard of the expression “watered stock.” What does it mean? If a company issues more stock to a promoter than the promoter returns in value to the corporation, the company’s stock is said to be watered. But who is to determine the value of the thing turned into the company by the promoter? It may be a mine. Is the mine worth what the promoter paid for it?¹ It may be worth a great deal more. Who can say? Johnson’s famous reply when he was asked how much his benefactor’s brewery, which he as executor was selling, was worth, hits the nail on the head—“I am not about to sell a parcel of vats and boilers, but the potentiality for growing rich beyond the dreams of avarice.” Property embarked in business is worth more, as an entity, than as a group of assets regarded separately. Assets are worth, indeed, what they will earn capitalized at a reasonable rate. What is a reasonable rate will depend on the conditions surrounding the business. An earning power based on an ephemeral demand, on a demand for

¹The legal questions involved are fairly simple. A promoter begins to be a promoter from the moment he conceives the idea of forming the company. Property held by him at that time may be turned in at its value, irrespective of what was paid for it. Property acquired by a promoter after that time must be turned in by the promoter at what he paid for it, irrespective of how much more it really may be worth.

luxuries that varies with the prosperity of the community, or on a hazardous undertaking, is clearly not worth as much as an earning power of \$100,000 growing out of the production of goods which satisfy an everyday need of the people.

It is wise to capitalize on an earning-power basis, and, if the earning power changes, to recapitalize. The recapitalization may take the simple form of a stock dividend, or it may be more complex. If, for example, earning power is high, but cash is needed, stock may be sold and partly paid with a contemporaneously declared dividend.

CHAPTER IX
FINANCING
(*Continued*)

INSOLVENCY, BANKRUPTCY AND REORGANIZATION

Readjustments.—Sometimes the capitalization instead of being too low is too high. Any form of business troubles may reduce a company's earning power to a point where it is insufficient to earn interest on its bonds, to pay dividends on its stock, or perhaps even to pay its ordinary debts as they become due. The causes may be entirely without the corporation, as, for example, where the demand for its product slackens, where competition becomes destructive and its competitors have strong financial backing to withstand a price war. On the other hand, conditions may arise inside the company, nearly all of which are traceable to bad management in some form or at some time, that make it necessary to readjust.

A readjustment is a voluntary rearrangement of ownership and creditorship claims caused by the failure of a company, present or prospective, to meet the claims against it.

Causes of failure.—In the previous paragraph we sketched in a broad way the causes of business failure. The subject is so important that we can afford to go into it in detail. As was indicated, the failure may arise without the corporation or business—from causes be-

yond control—or may be due to perfectly avoidable mistakes, or to negligence or incompetence.

The causes that are somewhat beyond control are :

1. Changes in public demand. This cause is avoidable, since a business management ought to foresee the change and voluntarily liquidate or change the line of product.

2. Competition. This cause is less a difficulty now than before the creation of the Federal Trade Commission. The real danger is never fair, intelligent competition. This is usually helpful. The true danger is unfair competition, and this is now being eliminated.

3. General business depression. Business depressions are quite certain to occur, but their evil effects may be avoided by competent business managers.

4. Death of important leaders. A one-man business, of course, will die with its master. Proper organization is the only real preventive.

The causes that are avoidable are :

1. Ignorance of business principles. Coupled with this is failure to apply the principles.

2. Negligence.

All other avoidable causes grow out of these two primary causes. The secondary causes, such as poor selection of goods, insufficient capital, and the like, need no special comment here. Fraud, dishonesty, theft, and the like, while sometimes very real obstacles in the way of business success, need not be treated here. Let it suffice to say that no business is really sound and safe that does not rest on sound morality and the universal rule of mutual benefit to business and customers in fair proportion one to the other.

Embarrassment, insolvency and bankruptcy.—Frequently a company finds itself in desperate need of ready funds. The total of assets may be all right; even earning power may be all right. The company may have taken on profitable contracts, installed machinery to perform its contracts, bought large quantities of raw materials—all of which means an outlay of ready money. Whence shall come the funds to meet the payroll? Such a concern is said to be financially embarrassed. It may resort to temporary and expensive expedients to raise cash, such as borrowing on its accounts receivable, or money may be borrowed from private persons at exorbitant rates.¹ Somehow it may squeeze through. If it does not, and actually has claims against it that cannot be met, it is said to be insolvent. A concern is said to be insolvent when it cannot meet its debts as they mature in the ordinary course of business. If the condition is still worse and assets are less than liabilities,² the concern is insolvent under the bankruptcy act definition of that term, and it may be forced into bankruptcy.

Remedies for insolvency.—When a company cannot pay its debts, some action is necessary to protect not only the debtor company, but its creditors as well. If nothing is done, some of the creditors may sue, obtain judgments, and levy executions on the property of the debtor, and sell the property, usually at a sacrifice, in order to satisfy their claims.

The company may have an excess of assets over liabilities, but its assets may not be in sufficiently liquid

¹ In most States a corporation can agree to pay any rate of interest without committing usury.

² For this purpose stock is not regarded as a liability.

form. Perhaps it has tied up too much capital in merchandise that is not moving rapidly enough. In time, however, this merchandise will be sold and converted into cash and the creditors probably paid in full. The company then should take some appropriate action to prevent the dissipation of its assets by insistent creditors who may bring their claims to suit. If it possibly can do so, let the company borrow or otherwise raise additional cash to tide it over a period long enough to permit the sale of some of its less liquid assets. This will enable the company to pay its other debts and keep in good standing with the creditors. If this is not possible, then the debtor company would do well to go to its creditors and ask them to extend the due date of the debts for three or six months, or even a year. Such extensions creditors are very likely to grant, providing they are satisfied that the debtor is honest and has sufficient business ability and financial strength to continue business and finally extricate himself from his present difficulties. Some creditors, however, may even then refuse to agree to the extension; they may insist on immediate payment. If the debts are few in number and small in amount, the debtor would do well to rid himself of the creditors by paying them, and he would probably find that the larger creditors would prefer this step to the receivership which would otherwise be necessary. If some of the creditors actually start suits and obtain judgment, the debtor would do well to apply for a receiver and so prevent these creditors from selling the property and dissipating the assets, by this means insuring the equitable treatment of all creditors. Indeed, if the debtor himself does not, under these cir-

cumstances, ask for a receiver, the other creditors, if vigilant, will do so.

Receiverships.—A receiver is an impartial person appointed by an equity court to hold property till the court can determine who is entitled to it. Receivership proceedings hold up all executions and give the creditors and the debtor an opportunity to look about for an easy, fair and satisfactory settlement. If the difficulties are merely temporary, the creditors may agree to give the debtor additional time. If they refuse, the receiver may be authorized by the court to continue the business, gradually dispose of the assets and pay off the creditors, and finally when all creditors have been taken care of, to return the business to the debtor.

Settlements with creditors.—Those are the remedies when the debtor's difficulties are temporary—when the debtor is suffering only from a lack of cash. But when a debtor's difficulties are more fundamental—as when he has an actual excess of liabilities over assets—some more drastic remedy is needed. If the debtor has lost his original investment and finds that his liabilities exceed his assets, he must either obtain additional capital or reduce his liabilities without commensurately reducing his assets. Ordinarily he will find it exceedingly difficult, if not impossible, to obtain additional capital from outside sources. Practically, then, he must go to his creditors and ask them to share part of his losses by voluntarily reducing the debts. This, a so-called composition or common-law settlement, the creditors may agree to, providing, first, that the debtor is honest, and second, that they think they will not get much more than the reduced amount of their

claims by putting the debtor into bankruptcy. If the creditors cannot agree to the common-law settlement, perhaps some method of dividing the property may be found that will be satisfactory to all and which will cost little to carry into execution. In order to guarantee his good faith the debtor may assign his property to one of his creditors or to some other person for the benefit of all his creditors. If the creditors cannot agree, the failed business will likely go into bankruptcy.

Going into bankruptcy.—We have not the space to go into a general exposition of bankruptcy law and procedure.¹ But a general outline will not be out of place.

Bankruptcy, as everybody knows, is a condition of insolvency declared to exist under the Federal Bankruptcy Act, and accompanied by the administration of the bankrupt's estate under the rules of the statute. Though, in the beginning, bankruptcy statutes were intended only to aid creditors in being sure that they got all the debtor's property, they have the further purpose now of enabling a debtor to free himself from debts honestly contracted, if there appears to be no means of meeting them. Thus the statute permits many to become economically free, after they have encumbered themselves with debts they find impossible to pay.

The bankrupt's property is handed over to a trustee and then usually sold, the proceeds being paid over ratably to the creditors. The debtor is then free from all claims against him (with few exceptions, and these only in cases where he has been guilty of fraud in connection with his bankruptcy proceedings) that existed at

¹ See Gerstenberg, *The Law of Bankruptcy*.

the time when the bankruptcy proceedings were started.

Bankruptcy sometimes is inevitable. But it does not provide an easy way out of debts. Better a thousand times for a debtor to pay his debts, to struggle to pay them, than to take the apparently easy course of the bankruptcy courts. True, even after a debtor has been discharged from debts that have been only partly paid, he may proceed voluntarily to pay up in full and thus rehabilitate his credit.

Compositions with creditors.—There is hardly a time when creditors cannot hold up legal proceedings and make a settlement of their claims with an unfortunate debtor. Thus the Bankruptcy Act provides that practically at any time after proceedings have been begun a majority of creditors may agree upon a composition which will be affirmed by the court unless there has been some form of fraud in the dealings. A settlement that cuts court costs, officers' fees and the like is always advisable, unless, of course, a fraudulent debtor is to make profit by it.

Who gets an insolvent debtor's property?—Many of the apparently intricate rules of bankruptcy law will lose their seeming complexity if it is remembered that they generally rest on the theory that from the moment a debtor becomes insolvent, in the sense that his assets are insufficient to pay his debts, his property virtually belongs to his creditors. He cannot give it away, he cannot even use it to pay some of his debts in full, for the Bankruptcy Act is intended to prevent the preference of certain creditors over others.

This does not mean that mortgages or other liens

given before insolvency are avoided, or are rendered ineffective. Were this not true, all liens, such as mortgages, mechanics' liens and the like would be ineffective. Ordinarily, then, when a debtor's property is distributed, after the costs of the bankruptcy action are paid, after taxes are met, and certain claims for wages taken care of, the rest goes to creditors, except that creditors with established liens may specifically have the property on which they have been relying.

We can but repeat what is said in the chapter on collections—the diligent, forehanded creditor is the one who wins out. Eleventh hour shrewdness is unavailing.

REORGANIZATIONS

Reorganization.—There are certain large businesses that fail but that do not go into the bankruptcy courts. The doors of these courts may be closed, either because the debtor has not committed a so-called act of bankruptcy, or is not insolvent in the sense that the assets are less than the liabilities, or because the debtor is a railroad or moneyed concern such as a bank or insurance company, which under the bankruptcy laws may not be put into bankruptcy.¹ Such concerns very frequently represent huge sums of capital that must be kept together. To break up the plants and sell the machinery and the rest of the property in separate parcels would simply mean the loss of the most valuable asset of all—the organization of the parcels into a money-making machine.

¹ Large concerns frequently come under the class of concerns that are insolvent in the sense of being unable to pay debts as they mature, but of having sufficient assets, at a fair value, to offset the debts. A concern cannot be put into bankruptcy unless the insolvency is one of the balance-sheet variety.

Such concerns are generally reorganized. Here again we shall be compelled to give only a very brief description of reorganization principles.

Purposes of reorganization.—Reorganizations have three main purposes:

1. Obviating the difficulties that made the reorganization necessary.
2. Supplying the funds needed to give the reorganized company a fair start.
3. Assuring a safe management that will see the company through its period of difficulty.

Obviating the difficulties.—The main causes of failure—perhaps we should say the immediate causes, for there may be other causes of which the primary causes are the effect—the primary causes of failure are overcapitalization, especially in the matter of bonds, low earnings, or unwieldy floating debt. As we pointed out inferentially in the section on capitalization, overcapitalization and low earnings are really one and the same thing. The difference is merely one of time—a company may start out overcapitalized and then it will become apparent that its earnings are too low to sustain the capitalization. On the other hand, the original capitalization may be satisfactory but the earnings may drop. Then it becomes apparent that the old capitalization is too high to be sustained by the new low level of earnings. In either case, the one remedy is to reduce the capital charges. The best way of doing this ordinarily is to combine the following expedients:

1. To combine small underlying bonds into a single large issue with a low interest rate.

2. To combine junior mortgages (that is second, third, etc., mortgages) into a fairly low-interest-bearing second mortgage, or convert them into preferred stock.

3. To change the contingent charges of preferred stock into the simple claim of common stock.

Furnishing funds.—Sometimes, as was pointed out in a previous paragraph, the difficulty arises from a burdensome floating debt that hampers the company and eats up all current available funds. The debt, possibly, was incurred to pay for fixed assets that should have been purchased from the proceeds of the sale of stock or bonds. The company may, in its reorganization, persuade the holder of this floating debt to accept bonds in payment. Ordinarily, however, under a well-established equitable doctrine, the holders of the floating debt have a claim better than that of the bondholders and they can therefore insist upon cash.

The company may have need of funds, moreover, to assist in its operation after reorganization. Lack of funds is apt to cause all kinds of ineconomies, and it is just these that the reorganization is attempting to eradicate.

Evidently, the reorganized company has no general credit. The public would not subscribe largely to its stock or bonds. The money must be forthcoming from the old security-holders—those who have a stake to lose. And the more certain they are to lose it—the easier it is to freeze them out—the more money can be expected from them to save their stake.

Forcing funds.—In accordance with these ideas it is usual to foreclose one of the senior mortgages, thus

wiping out the interests of all succeeding securities. At the foreclosure sale the property is bought in for a new, reorganized company—the X Railway Company, perhaps, if the old company's name was the X Railroad Company—and then stock and bonds are issued by this company to all those who have put up the necessary funds. It is usual to let the holders of first-mortgage bonds take first-mortgage bonds in the new company, but the holders of inferior claims and the holders of stock are usually required to pay an assessment as the price of admission to the new company. Then the assessment is recognized by the issue of bonds for approximately the same amount, and the general claim of the security holder is recognized by issuing some stock—preferred or common.

TYPICAL REORGANIZATION

Technique of reorganization.—Having in a general way sketched the aims of a reorganization, we may now go back and outline the practice usually followed in attaining these ends.

In the first place, to prevent conflicting claimants from seizing property, a receiver is applied for. This puts the custody of the property in the hands of the court and preserves the property as a unit till the conflicting claimants can agree upon a plan of reorganization. The various claimants then form committees, the moving spirits in the committees being the bankers who originally sold the issues, or the bankers, insurance companies and others who hold large quantities of the issue. Thus there may be five or six committees that will eventually be represented about the "peace table." In order to assure that

what the committee thinks is right will be agreed to by all the other holders of the same securities, the committees advertise for "deposit of securities." This, in effect, means that the depositing security-holders constitute their committee their plenipotentiary attorneys to look out for their interests.

Then comes the "jockeying for position" by the committees. It must not be thought that the arrangement of interests in the new reorganized company is a simple matter, dependent entirely on legal principles. Indeed, in many instances economic problems, the answers to which must come from competent engineers and accountants, determine the new alignment. A simple example must suffice. Suppose A bonds have a first mortgage on property A, and a second mortgage on property B, while B bonds have a first mortgage on property B and a second mortgage on property A. From the legal point of view, these bonds are on an even footing—each being secured by a first and a second mortgage. But if property A has greater earning power than his property B, clearly the A bondholders are in a better strategical position than are the B bondholders. To decide these questions it is customary to get an engineering and accounting report on the value and earning power of the different parts of the company.

When most of the committees have agreed upon a plan, it is put into execution by means of a foreclosure sale. A new company is formed pursuant to the plan, and those who agree and do what is required of them get interests in the new company.

Since it is essential to the success of the reorganized

company that practically all the interests agree and come into the new company, paying such assessments as are required of them, it is usual for a banking syndicate to underwrite these assessments, the underwriting agreement providing that for a certain compensation in stocks and bonds, the underwriters will pay the assessments of all the old security-holders who do not come in.

Providing a good management.—The reorganization must look forward to permanent success, and this can be had only with wise and competent management. To get this, it is usual to use the device of the voting trust. The voting stock of the new company is issued to trustees, who in turn issue receipts, in the form of certificates to those who otherwise would be entitled to the stock. This leaves the stock in the hands of the trustees, and they select competent managers. When dividends are paid, they come in theory, at least, first to the voting trustees, who pay them over to the holders of their certificates. The certificates are as negotiable as stock, and are dealt in on the exchanges. Usually the voting trust is continued by the voting trust agreement for a time sufficiently long to insure the success of the reorganized company and perhaps the liquidation of its bonded indebtedness.

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CHAPTER X

MANAGEMENT

The problem of management.—In Chapter VI of this book will be found a brief description of the various classes of business organizations, including individual proprietorships, partnerships and corporations. In the chapter referred to, the organization of business enterprises is considered primarily with respect to the problem of the distribution of income, risk and control among the owners of the capital used by the business. In the present chapter we must consider the internal organization of the business enterprise, primarily with respect to the determining of its policies, the making of its plans, and the means whereby these policies and plans may be put into execution or operation.

Management, in brief, is the conducting of the business enterprise; it consists, on the one hand, of organizing, or planning; and, on the other hand, of administration—that is, of putting the plans into effect. Organization and administration, accordingly, are seen to be phases of management, corresponding very closely to planning and performance.

From the very inception of a business enterprise management comes into play. In its earlier stages, however, it is usually called “promotion” or “organization,”—management being regarded as the directing of an established business. In the directing of an established busi-

ness, obviously, organization goes on continuously and is a part of management. There is no essential difference between the first assemblage and correlation of the parts of a business, commonly called organization, and the subsequent re-correlations in the adding of new departments, new men, new machines and new markets, commonly looked upon as coming within the province of management.

The problem of management of the business enterprise is that of the gathering together of whatever profit-yielding elements can be found, and of combining these elements and directing them in such a manner as to secure for the business as an entity the greatest amount of profit. These profit-yielding elements, in general terms, are goods supplied by the capitalist, labor by the employee, purchasing power exercised by the public, and managerial ability supplied by the manager or administrator. These are the four elements out of which a business enterprise is formed. Goods without the application of labor are of no value; labor without goods upon which to expend itself is of no value; the product of goods and labor without a market is of no value; and the market without the product cannot exist. Goods, labor and market cannot come together of their own accord—they must be brought into relation each with the other. The person who brings these several elements together is a “promoter”; if he continues their correlation and co-ordination, he is known as an “enterpriser”; the exercise of the enterpriser’s function, immediate or delegated, is defined herein as management.

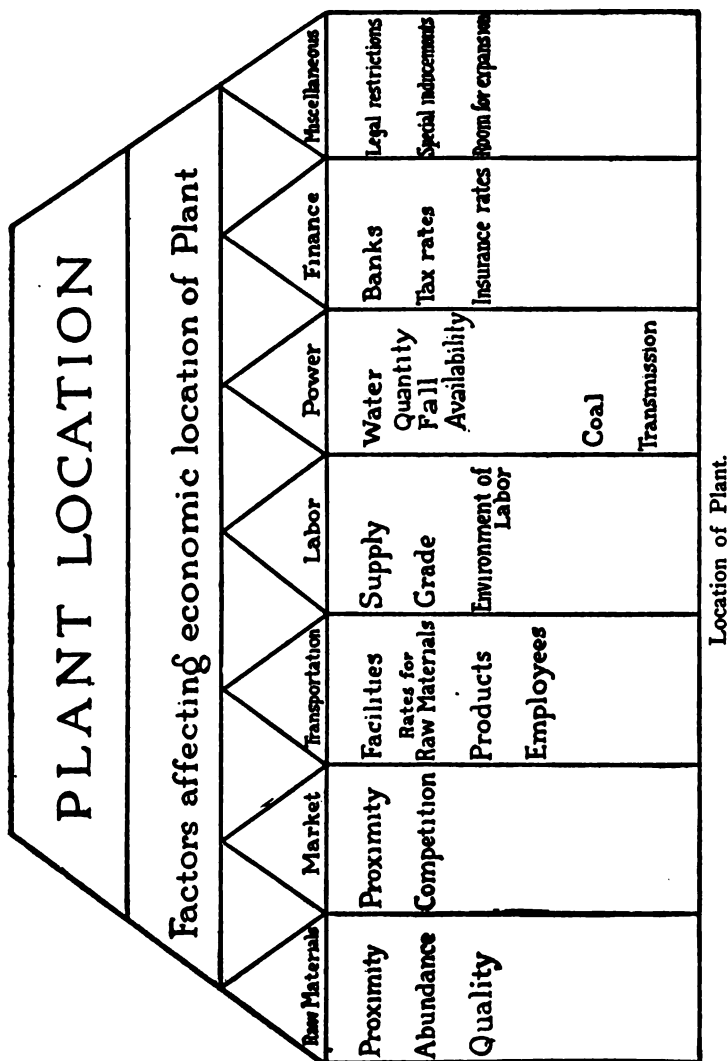
Location of plant.—The physical location of the plant

of a business is a factor that affects the success of the enterprise very directly. For example, a concern located within easy distance of the market for its products may make a fair profit, whereas one at a greater distance or located on a poor railroad or away from water connections with the market may, with better management, use up its profits in transportation charges. The accompanying chart shows at a glance the various considerations that enter into the solution of the problem of economic plant location. A few of the considerations are not so self-explanatory that an exposition is altogether unnecessary.

In studying the proximity of a prospective location to raw materials, the product must be analyzed and the importance of each ingredient ascertained and its source located. The strategic value of the location will depend on its proximity to the raw material of cheaper grade on which transportation in relation to quality is highest. Moreover, the raw materials available must be of a grade suitable for the particular grade of product it is contemplated manufacturing.

The market should not only be close at hand, but should extend about the location in all directions. Ordinarily, transportation charges will be saved if a location in the center of the market is chosen.

Perhaps, as was indicated above, no consideration is more important than that of transportation facilities. These facilities should be studied carefully as they affect general distribution of the product and as they affect economic operation of the plant. Hauling coal, for example, from the railroad to the plant is a great disad-



vantage when we consider the convenience of bringing coal cars directly from the mine on elevated tracks directly over the coal bins of the plant.

Labor supply sometimes is greater at one season than at another. A plant should not be located where it will have to make its strongest bid for labor in competition with other plants having the same seasonal demands. Moreover, some consideration should be given to the attractiveness of a place to the laboring classes. Is the locality healthful; is the water good; are the social conditions good or is the town controlled by vicious politicians; are there distractions that may take away employees—these are questions that must be considered carefully. If the prospective location is near other places doing a business similar to that of the enterprise in question the proper degree of skill will likely be obtainable.

The power question hinges on the proximity to direct water facilities, to the coal fields or to hydro-electric developments.

The banking facilities must be taken into consideration in connection with the generally prevailing banking laws that banks can loan to one concern amounts not in excess of a certain proportion of the capital and surplus of the bank.

In studying the legal restrictions to which an industry may be subjected, the laws of the State relative to hours of labor, wage payments and employees' liability should be investigated.

While some people always act on the principle that a thing that costs nothing is worth nothing, the special inducements offered by some localities, such as free factory

sites, loan of capital for building purposes or special tax rates may well influence the managers in selecting one of several locations where the other considerations are all equal. Certainly no location should be chosen which does not give room for almost unlimited expansion. This last consideration explains the establishment of such mushroom cities as Gary, Indiana.

Unity of control essential in management.—Business enterprises, of course, are conducted on a smaller scale than is a world war, but in the one as in the other there is an advantage to be derived from centralized control. The business enterprise, like an army, must have a head. We have no means of knowing what would have happened if America and the Allies had continued to face Germany's single control with a divided control, but the turning point of the war seems to have been upon the giving of supreme command to General Foch. One pilot is better than two for a ship, although the two may be quite equal to each other in skill. So in the guiding of a business enterprise, there must be a single manager at the helm. This is not to say that the manager may be self-sufficient and arbitrary in his course, but that in view of the situation as it appears to him at the given time, enlightened by counsel and information from many sources, he must make the final decision. He must estimate the interaction upon each other of all the determinable factors in the problem and thus forecast the results of alternative combinations of factors, and must choose the combination which seems to him the best.

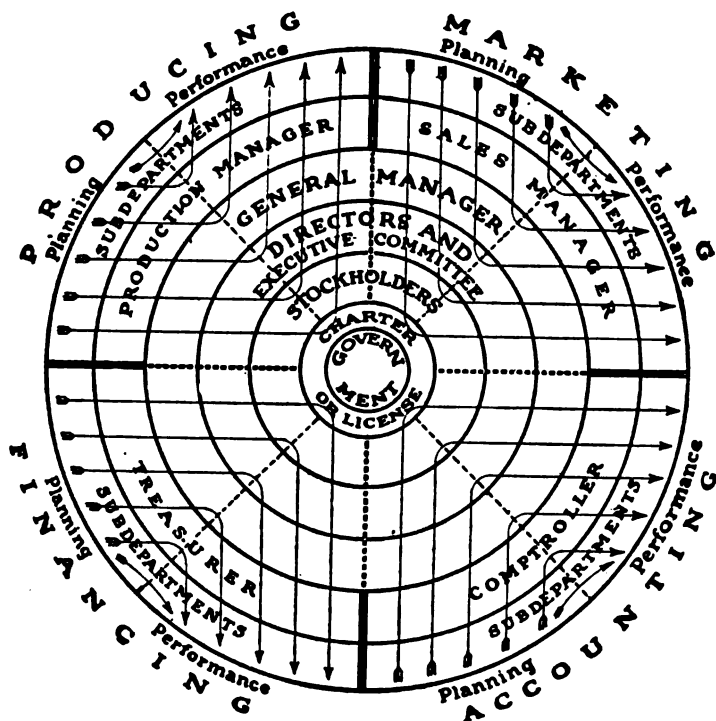
The business enterprise, then, must be controlled by the management—and not by the capitalist interest, or

the labor interest, or the public interest. The purpose of the business is the creation of the greatest total of new values—that is, the largest gross profit, so to speak, which profit is to be distributed as interest to the capitalist, wages to the laborer, various savings or benefits to the public, and the residue, commonly known as “profits,” to the enterpriser, who may or may not be the active manager. If he is the active manager, he may pay himself a salary as manager before calculating his profit as enterpriser. It is to the interest, accordingly, of all who contribute to the formation and operation of the business enterprise, whether their contribution be capital, services or patronage, to consent to a unified control, exercised by the management, leaving questions of the distribution of the proceeds of the business to be dealt with as a separate problem. We cannot here digress to enter upon a discussion of the fair distribution of the gains resulting from the operation of the business enterprise further than to make note of a point which is of importance in our consideration of management—that while under the law the owners of the business enterprise include only those who own or control the capital employed in the business, under public opinion—a power in many respects superior to the law—all who contribute to the operation of a business have a right to receive a fair share in the distribution of the proceeds of the business. Thus public opinion demands that capital receive a fair return, the laborer a fair wage and the public fair service and fair dealing. The insistence of public opinion upon these “fair” distributions as a “right” of the interest involved implies that these interests are for prac-

tical purposes proprietary interests in the business enterprise. The manager, then, as we have already noted, must not conduct the business to the advantage of one interest to the exclusion of the advantage of the other interests, but must regard first the prosperity of the business as itself an entity, to the ultimate benefit of capital, labor, and the public.

The distribution of managerial authority.—We may assume, then, that the component parts of the business enterprise have been brought together and must now be correlated in such a manner that the authority held and exercised by the manager can be applied to each unit of the business structure. The manager himself can be in immediate touch with only a very few of the units at any given time, yet each unit must at all times be subject to his direction—otherwise it ceases to be a part of the organization. The manager must delegate or distribute the requisite authority along certain lines, direct or indirect, which reach finally to the farthest unit of the business. The direction or course of these lines of authority determines the internal form of organization—whether it shall be of the “traditional” form, or the “functional,” and also whether the type of management shall be known as “unsystematized,” “systematized,” or “scientific.”

In the next chapter we shall consider briefly the several types of “management”; the remainder of the present chapter will be devoted to a description of the several so-called forms or types of internal “organization.” In the explanations which will be made of the various types the illustrations are taken for the most part from works



AUTHORITY IN THE BUSINESS ENTERPRISE

SHOWING SUBORDINATION OF DETAIL

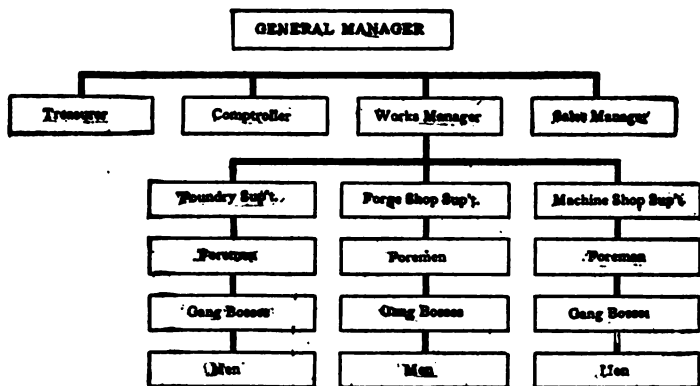
All operations segregated into planning and performance. Plans put into execution only after approval by the designated authority.

Standardized routine operations go direct from planning into performance; others, of varying importance, to department heads, general manager, or even to stockholders or to the charter itself.

Problem of management is to **SHORT-CIRCUIT** these lines of authority (indicated by the arrows) by means of standardization, keeping detail in the outer circles and leaving higher officials free to deal with the larger plans and policies.

organization, since it is in the "production department" that the best examples are to be found. The principles illustrated, however, are applicable to the organization of any department.

The "line" type of organization.—The "line" type of organization is the traditional form; it is known also as the "military," "fractional" or "numerical" type. In such an organization we may have for example, groups of workmen, each group under the entire control of a gang boss, the gang bosses under a foreman, the foremen under superintendents, the superintendents under department heads, and the department heads under the general manager.



LINE ORGANIZATION

The line organization provides an excellent system for the giving of orders and for the fixing of responsibility. If the man at the head of such an organization were all-wise, and if his subordinates were competent to execute the orders as they are transmitted and re-delegated down

the line, the simplicity of this type would go far toward offsetting certain disadvantages arising from the fact that the line organization is not adapted to an economical division of labor. Unfortunately, however, the manager cannot be all-wise, and his department heads and foremen cannot have the scope of knowledge, skill or training, the "all round" ability, which they need if they are to have full charge of a section of the business. Hiring men, teaching them, settling disputes, repairing machinery, ordering material, planning the current work—these are a few of the duties that may require the foreman's attention, all at the same time, and as Sir Boyle Roche observed, "No man can be in two places at once, barrin' he's a bird." The duties of the manager himself are equally varied, and demand for their most satisfactory accomplishment a range of knowledge and ability which no one man may hope to possess. The result is, in the line type of organization, that the manager must make many wrong decisions, and neglect much that is important for what is unimportant. The making of costly mistakes is inevitable, and so is the issuance of instructions that, because of the limited knowledge of the manager when he prepares the instructions, cannot possibly be carried out. The subordinates, however, are held responsible for executing the orders which have been so issued, and the burden is put upon them of finding means of attaining the result which is required. That there must be an indefinite amount of wasted energy, under such a system is so obvious as to require no further discussion.

Division of labor in the line organization.—As we

have seen, the workmen in a line organization are arranged in groups, each group under the entire control of a gang boss or a foreman. The foreman is responsible for the satisfactory completion of whatever work is assigned to himself and his groups of workmen; the shop may be a large one, and many different kinds of work may be carried on within it at the same time, by the same men under the same foreman. The disadvantages of such a system are obvious and have been touched upon in the preceding paragraphs. Especially with the increase in size of such a shop is it difficult to find competent foremen and competent workmen. It does no good to discharge them, for sufficiently capable men are not to be found.

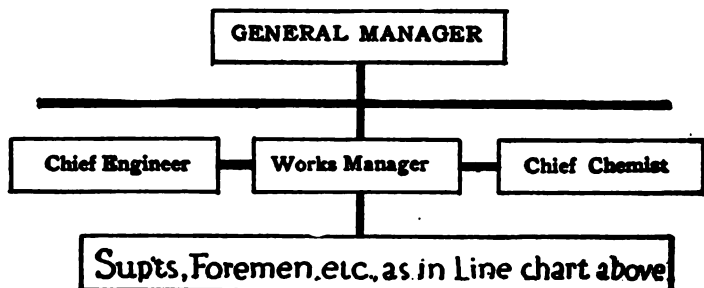
Records in the line organization.—It is evident that with the same men engaged in a great variety of activities, the keeping of accurate records is much more difficult than if the men were employed at uniform tasks. Especially when a piece-work wage system is used, it is difficult to get the men to keep accurate records of the time taken with each part of the process. Consequently, while the total cost of a job may be known—although the figures cannot be exact, since arbitrary values must be given to overhead and other indeterminable factors—the records are useful chiefly from the historical standpoint, and may be of some value for consulting in order to determine the probable total cost of another job to be performed under similar conditions. Such records cannot show accurately if at all the items which compose the total cost. We may know that 5 is the sum, but may have no means of finding out whether that particular 5

represents $2+2+1$, $2+1+2$, $1+2+2$, or $3+1+1$. The consequence is, that improvements are largely accidental rather than the result of definite action, for until we have a means of making analyses of production costs we must have only an indefinite idea of what those costs are and of how they could be reduced.

Summary.—The line organization, then, has the advantage of original simplicity; it follows the lines of least resistance. Authority is distributed easily, and responsibility is fixed definitely. This form does not, however, lend itself to the improvement of working methods, and, moreover, lacks the mechanism whereby men of exceptional ability are given recognition and promotion. Good work may go unnoticed, since record-keeping is usually of a primitive form, and there is even a positive obstacle in the way of the good workman's progress—the jealousy of his immediate superior, who may fear that the man is "after" his own job. The natural tendency of the lesser officers of an organization is to keep the workmen under them somewhat at the same level—discharging the worst, and discouraging or repressing the best. In spite of these obvious advantages, the line type is still by far the most common form, especially among the smaller business organizations.

Line-and-staff organization.—With the need for the correlation of a business with its environments, commercial and scientific, the line-and-staff type of organization has been developed. Essentially, this type is merely the line organization assisted by "staff" advice, the "staff" consisting of experts such as engineers, chemists or other specialists who investigate the problems of

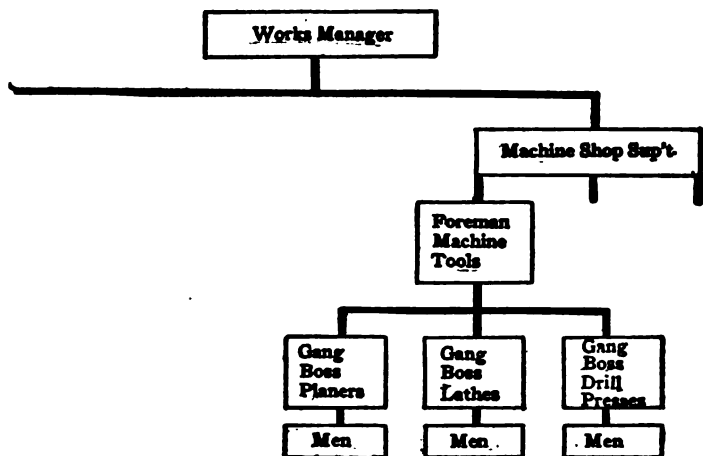
the business and make recommendations which the management may or may not accept. Such staff assistance may be given at any part of the line, from manager to foreman, but this must be noted carefully: The improvements suggested by the staff must not be applied except after approval and assimilation by the proper authority. In other words, suggestions or recommendations must be brought to the designated authority and there checked up, accepted or rejected, and from there returned to the line to become a part of the organization. If this were not insisted upon, confusion would result, methods apparently improved as to one part of the process might involve disarrangement or loss in the succeeding stages.



LINE AND STAFF ORGANIZATION

The departmental type of organization.—It was noted that a disadvantage of the line organization is in the fact that the foreman or other official is not able to “keep up” with the growth of his department. Good “all round” men are hard to find, and even if secured they soon have so many duties given to them that they cannot perform them all. An attempt, and a quite suc-

cessful and practical one, is made, in the departmental type of organization, to overcome the trouble alluded to above. The essential principle of departmental organization is a sort of group specialization, in which a foreman and his gang, selected and trained for their special duties, have entire charge of certain subdivisions of various operations. Closely related machines or operations are merged into small, specialized departments, each, as noted above, being under the direct charge of a single foreman or gang boss. In the building operations at the army camps, for example, the practice in some cases was to let one foreman and his gangs dig the holes for the foundation posts, another set the posts, another saw them off, another lay the sills, and so on; with such



DEPARTMENTAL ORGANIZATION

a group specialization or division of labor the wooden structures of the camps arose as if by magic. Each

foreman, under such an arrangement, is responsible for all the operations included in his department, and his men are not at different stages of the operation under the charge of different foremen, as in the purely functional organization. The departmental form of organization may be illustrated by the following chart, which is the same as that of the ordinary line type except where the specialization takes place among the foremen and gang bosses.

Departmentalized organization is seen to be apparently an outgrowth of the line type—it may of course include also any of the features of the line-and-staff. It resembles the functional type to the extent to which the grouping in sub-departments is carried out with a view to the most logical and comprehensive assignment of functions. It differs from functional organization, however, in that the foreman and his gang deal with functions in cross-sections, so to speak, instead of with complete functions. For example, in a purely functional organization the repair boss is responsible for the upkeep of all the machinery in the establishment, while in the departmental organization each foreman is required to keep in repair the machines in his own sub-department. A sufficient number of sub-departments is formed, so that the foreman of each is able to give the necessary attention to detail, with as many men in his gang as he can handle to advantage.

The “committee” or “legislative management” type.—It will have been observed that the line organization represents the extreme in arbitrary and autocratic control of a business. The manager, competent or

incompetent, makes arbitrary decisions and issues orders in accordance with them, uninfluenced, unless incidentally, by the experience or suggestions of others, either within the organization or without.

In the committee or legislative management type we have the extreme in democracy—not that actual power to control is in any manner surrendered by the manager, but that help in deciding the problems of the organization is asked and obtained not only from the staff specialists but also from subordinate officials, or even from the workmen themselves. This is accomplished by the forming of committees upon which are represented the various departments and sub-departments of the organization, which committees meet with and make recommendations to the management.

Favorable action by the management enacts the recommendations into "laws" binding upon the line, i. e., future orders issued are to be in accordance with the recommendations. Such recommendations may cover the whole field of activity of the business—sales, production, wage-rates, welfare, improvements in the organization—in fact nothing is too small or too large to be brought to the attention of the management by these committees. The members of these committees are certain department heads, together with members elected by the employees or appointed by the management. Both line and staff are represented, although the committees, as such, belong to the staff. Election or appointment to these committees, so far as representation of the workmen is concerned, is an honor to be striven for, and comes as a reward for the taking of an intelligent interest in the work

and surroundings. Under this system the ambitious employee is brought to the attention of the management.

The "suggestion system."—The so-called suggestion system—not a form of organization, but which may be adopted as an adjunct to any type of organization—may be noted in connection with the legislative management type which has just been described. As illustrative of the operation of a suggestion system, the plan of the Eastman Kodak Company may be cited, as described by Mr. Edwin A. Hunger, of this company, in *Factory*, April, 1918.

"The two major requisites of a suggestion system," says Mr. Hunger, "are making a main issue of it, and not a side issue, and giving substantial rewards for suggestions adopted." The Eastman Company's organization for handling the system consists of a general chairman, a secretary, and five separate committees of three department heads each. Each of these committees acts only upon suggestions coming under one of the following classifications: cost reduction; improvement of product; general maintenance; accident prevention; improvement in factory methods.

Employees below the rank of foreman are encouraged to send in suggestions, and for those adopted rewards are given according to their value, or estimated value, ranging from a minimum of from one to five dollars for suggestions of the respective classes, to an indefinite maximum. The largest awards so far made have been as much as \$1,100.

While foremen, for reasons of policy, are not allowed to compete under the regular system, special "foremen's

non-participating prizes" are given to the foremen who during stated periods have sent in the greatest number of suggestions which are adopted.

In order to handle complaints of unfairness, a special "grievance committee" meets at regular intervals.

To indicate the scope of the system—in 1916 the Eastman plant at Kodak Park, with 4,500 employees, adopted 1,000 suggestions, out of 2,300 submitted.

Publicity and frequency of awards are means of keeping up interest.

The most noticeable benefits resulting from the system are: Stimulation of employees' interest in their tasks; Improvement of the company's products; Promotion of welfare work; Keeping a line on men deserving promotion and also, on the other hand, on the foreman who "needs no help from anybody."

Functional organization.—The functional type of organization is that which is identified with scientific management. The basic idea in this form of organization is the distribution of tasks in such a manner that each worker and each supervisor will have as few distinct duties as possible. Under such an arrangement, duties can be assigned to those who are especially fitted to perform them. The worker, moreover, by constant repetition of the same process, becomes far more proficient than if he had a number of varied duties. Practically, however, "functionalization" affects principally the larger or more inclusive functions, such as planning as distinguished from performance, and functions which are common to more than one department or subdepartment, such as care of belting, repairing machinery and the like. The

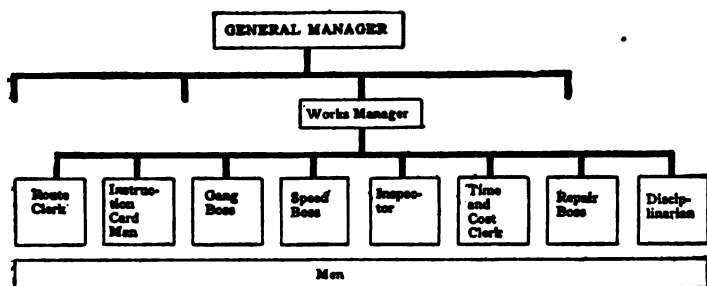
foremen, in a functional organization, are responsible directly to the manager of the department and not to over-foremen or superintendents. On the other hand, the foremen come directly in contact with the men who are at work, without the intermediation of gang bosses. (The "gang boss" in the functional organization is a foreman of equal rank with the other foremen.) Since these foremen are skilled and competent men, chosen especially for their specific duties, the intimate association between them and the workmen is a decided advantage.

The most striking feature of functional organization is the complete separation of planning and performance. Everything that is to be done is planned in detail before performance begins. The men while working at their specialized tasks are at different stages of the process under different foremen, as will be explained in the following section.

Functional organization in shop work.—While a functional division of labor is expedient in whatever department it can be instituted, it is in shop work that it has reached its highest development. The system here described was devised by the late F. W. Taylor (1856-1915), whose studies with the object of eliminating wasted effort in shop work led to his discovery of the principles incorporated in what is known as "scientific management."

In shop work under the Taylor system a planning department is maintained where all data relevant to the planning of the work are kept. These data include records of the best methods for performing every task, secured by time-and-motion study as described in the following

chapter. The planning department also has all necessary data pertaining to the work which is under way, the machines and men available for each task, and other information of a like nature. The task is planned and instructions are written out covering each stage of the process, so that the men and machines assigned to the



FUNCTIONAL ORGANIZATION
(Showing the eight "functional foremen")

task are not kept waiting. The work in the shop, instead of being under a single foreman, is supervised by eight "functional" foremen, each having a separate division of the labor of supervision and each responsible, as noted above, directly to the works manager.

Receiving the order.—When an order comes in, one that requires engineering, for example, the order is first submitted to the credit man for approval or rejection. If the applicant's credit is good, the engineering room and the drafting room prepare the drawings and the bill of materials. The bill of materials or list of supplies needed, with instructions for delivery, is sent to the stores department, which delivers them at the specified place and time.

The "route clerk."—The "route clerk," or "order of work clerk," the first of the functional foremen, is located in the planning department. He decides upon the order of work for the day in the shop, and also makes the individual "route sheets," which specify the course of an order through the shop. He is a skilled machinist, thoroughly familiar with all conditions in the shop, so that he is able to take the drawings and decide the best way in which the work can be done and also to select the particular machines and men who are to do it. The workmen's instructions as to where they are to be at specified times during the day are hung on a "bulletin board." The order is "routed" through the shop, the route sheet showing the operations in proper sequence.

The "instruction-card man."—The "instruction-card man" is a specialist who studies the instructions on the route sheet and puts the detailed directions for each operation on the "instruction card"—a card which goes with the job, so that the workman at his task has complete information as to how each detail is to be performed. The instruction-card man will use "standard"—that is to say, previously perfected—methods as far as they are applicable, and will devise the best methods he can for performing of irregular or unstandardized operations. Standards in this sense may be methods, materials or parts which have been ascertained by careful experiments to be the best for the purposes for which they are to be used. When the "one best way" is ascertained by time-and-motion study, it is adopted as a "standard."

The "gang boss."—The job then goes to the "gang boss" in the shop. The gang boss has previously been

informed of its coming and has made all preparations, such as assembling materials and tools, which have been delivered by the stores department. The workman also arrives at the indicated time, having been notified by means of a tag on the bulletin board. The gang boss sees that the job is properly begun in accordance with the directions contained in the instruction card, and that the workman understands his instructions and is apparently competent to carry them out on schedule time.

The "speed boss."—The job is next taken charge of by the "speed boss," who sees that the operations are performed according to the instructions detailed on the instruction card. The term "speed boss" has been an unfortunate one, misunderstood or misinterpreted by the labor unions. "Speed" refers not to driving the workman at the highest possible speed, but merely to maintaining standard or schedule speed, which has been determined as the most economical that can be maintained without injury to machine or workman.¹

The inspector.—The operation under the speed boss being completed, the job is examined by the inspector, whose duty it is to see that the instructions have been complied with and that there are no defects of material. Inspection completed, the gang boss moves the job to another machine for its next operation, or if it has been completed, sends it to the assembling room or to the shipping room.

The "time and cost clerk."—The next functional foreman is the "time and cost clerk," who takes the time

¹ The term "schedule boss," or some similar term, ought to be adopted in place of the ill-fated term now generally in use.

cards of the men who have worked on the job, and computes the wages and bonuses earned by the workmen and turns in to the cost department the separate items of cost that have entered into the work.

The "repair boss."—The "repair boss" is the functional foreman in charge of the upkeep of all machines in the establishment.

The "disciplinarian."—The "disciplinarian"—the eighth and last of the functional foremen—has charge of discipline among the men; he alone suspends or discharges them, and may have the duty of hiring them as well.

It will be observed that all the duties of these eight foremen were formerly performed by one "all round" man. While, as Dr. Taylor pointed out, it is practically impossible to get one man competent to perform them all, it is not difficult to get eight men, each of whom has the qualifications which enable him to perform to advantage a single division of the duties of foremanship.

"Lost motion" eliminated.—Despite the fact that in the functional organization there are eight foremen employed, whereas in the military organization there would be only one in each shop, there is a very little waste of time or energy under the functional system, for nothing is done that does not have to be done under any other system. The planning of the work, for example, is done by competent men with all necessary data at their finger-tips, whereas under the old systems the planning had to be done in part by the foremen and in part by the workmen, themselves, while expensive machines were standing idle.

Why increase of output is profitable.—Here it may be well to explain briefly why it is so advantageous to a factory to increase the output of the workmen, and even to pay large bonuses for extra piece-work or overtime. It is because the labor cost, large though it may be, is only a minor part of the total production cost. Overhead expense goes on continually, interest and depreciation mount up and every extra piece of work turned out is practically clear gain, although, of course, the cost is distributed over the entire output.¹

Installation of a functional system.—Functional organization, identified with scientific management, must, according to its originator, the late F. W. Taylor, be installed in full or not at all. Mr. Taylor insisted upon the complete scientific preliminary research, the painstaking time-and-motion studies, and the complete rearrangement of the system. In some cases, however, it has been found possible to adopt functional organization in part, with excellent results. It is only fair to say, however, that many incompetent and ignorant men, posing as "efficiency experts," have undertaken to install their particular brands of "scientific management," to the inevitable disaster of the concerns employing them. Such failures should not be attributed to functional organization or scientific management, but to the inexpertness of the "expert."

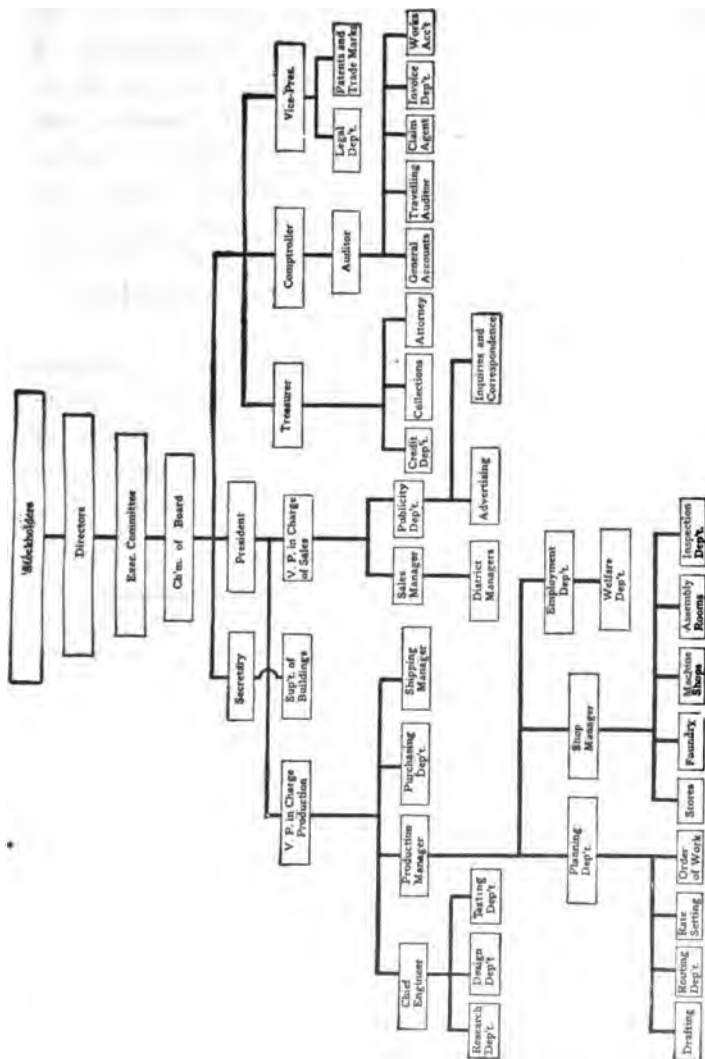
¹ The term "load-factor" explains the situation. By "load-factor" is meant the ratio of average use of a plant to its total possible use. Thus, if a dynamo has a capacity of 500 kilowatts and the average amount of electric current used by consumers is 300 kilowatts, the load-factor is 60. Public-utility engineers employ the term constantly and aim in every way to increase the load-factors of plants under their control.

ORGANIZATION OF DEPARTMENTS

The four "basic" departments.—All organization, of course, must be to some extent "functional"; the term "functional organization" implies merely that in this type of organization the functions are segregated more intelligently than in the other forms. A functional division of the activities of any business leads to the formation of the four "basic" departments—financial, production, sales and accounting. The number of the departments is, of course, purely arbitrary, but the creation of four main divisions of the functions is usually the most convenient and the most logical. Production, for example, might be held to include selling, since production is not complete until the article is in the hands of the consumer. The finished product, to one manufacturer, is raw material from the point of view of another. Likewise, it would be equally logical to hold that production is included in selling, for an article must be procured before it can be sold. The fact that specialized ability, however, is required at each successive stage of the processes of business, makes it advisable to segregate the activities of the business by creating a number of departments, each under the charge of a manager who has the requisite special training as well as natural fitness for his position.

Brief outlines of the organization of the four inclusive departments are given in the pages following; the departments in operation will be described more fully in separate chapters.

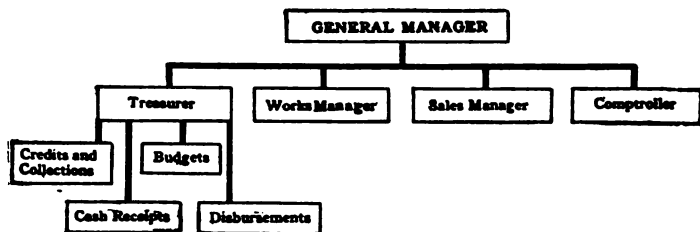
The financial department.—An arbitrary classification of the activities of the financial department might indicate two main divisions of the work of this depart-



Organization of a Manufacturing Company

ment: (1) financing, in its broader sense and (2) the ordinary or routine collection and disbursement of money. Under the first division would come the securing of funds for the establishment of the business; and for its development, including the providing of needed equipment and of sufficient working capital. The second division would include what might be called standardized operations—taking care of bills receivable and bills payable, “meeting” the payroll, and the safe-keeping of actual money.

The chart given herewith indicates the organization of a financial department. Important questions of financing, of course, will go to higher general officials, or even to the stockholders, subject to the limitations imposed by the charter or by the laws of the State.

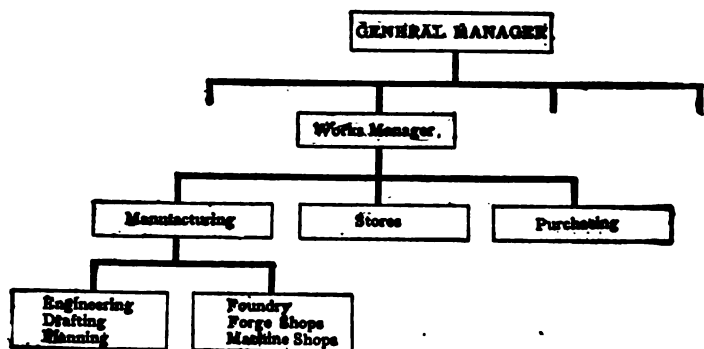


OUTLINE OF FINANCIAL DEPARTMENT

The production department.—Showing the organization of the production department, subject, of course, to modification to suit individual conditions, we have the chart shown on the following page.

Under the works manager, as indicated by the chart referred to, are the shops and foundry, and also the stores and purchasing departments. Subject to the authority of the works manager, these latter departments

would be in charge of the balance-of-stores clerk and the purchasing agent, respectively. The authority of the works manager over purchases and stores, however, is not absolute, but is merely an authority to make requisitions, as provided by the scheme of organization. The purchasing agent is responsible to the comptroller for the proper conduct of his office.

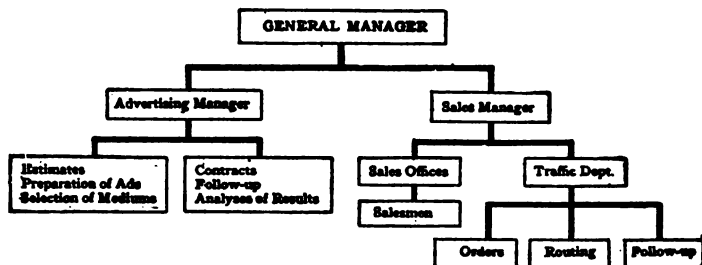


OUTLINE OF PRODUCTION DEPARTMENT

Under the works manager will be the superintendents, foremen and workmen. It will be remembered that in the Taylor system some of the foremen are in the planning department, responsible, with the rest of the foremen, directly to the works manager. Separate planning departments may be maintained for the shop and the foundry. The functional foremen, under the Taylor system, are eight in number. It is the practice in establishments too small to justify this number of foremen, to arrange the working system practically on the same plan, but to assign to a single man the care of several functions. On the other hand, if there is more work than

the eight foremen can supervise, several foremen may be appointed to a single function, with an "over-foreman" in charge of each such group.

The sales department.—The structure of the sales department is indicated by the chart below.



OUTLINE OF SALES DEPARTMENT

In a business of wide or national scope, district sales offices may be established, each covering perhaps several States. Various considerations will determine the strategic location of district headquarters and the territory which shall be included within a district. Special conditions aside, it is well to lay out sales districts, as well as sub-divisions of districts, on a basis of population rather than on a geographical basis. Progressive sales managers make use of maps which show the States or marketing districts of the country on a scale proportionate to population.¹

Within these sales districts, "divisions" are created, each division in charge of a local sales manager whose

¹ The more logical plan, where it could be carried out, would be to draw the map to a scale not merely of gross population, but of "population" of prospective or possible customers. Very careful market analyses would have to be made, in order to obtain approximate accuracy in such a map, however, and frequent revisions would be necessary.

duty it is to supervise the work of the traveling salesmen within his division, the division being subdivided into "territories," each suitable in size to occupy the time and attention of a single salesman. The local manager must keep in the closest personal touch with the salesman, and see that the territory assigned to each is neither too large nor too small and that it is "developed" to its best possibilities. Since it is obvious that the local manager is able to give such intelligent supervision to only a limited number of territories and salesmen, the size of his division is determined by the extent of the territory he is able to care for. If the business in a division increases to such an extent that the local manager is no longer able to give the requisite personal attention to the work of each salesman, a new division must be created.

In the chart of the sales department it will be observed that the traffic or shipping department is shown as a subsidiary of the sales department. It is sometimes held that the traffic department should be placed under "production." Delivery of the product is undoubtedly a part of production, but it is also a part of sales. There are probably fully as many reasons for placing this department under sales as for placing it elsewhere. Production itself should be proportionate to expected sales. The sales manager, when he makes a sale, is obliged to make certain promises with respect to delivery. In order that he may know what promises he may make with safety, and in order that he may be able to fulfill them, it is essential that he have authority over the shipping department, at least to the extent that he may specify the time of

shipment, routing, or any other essential to delivery according to the agreement which his department has made with the purchaser.

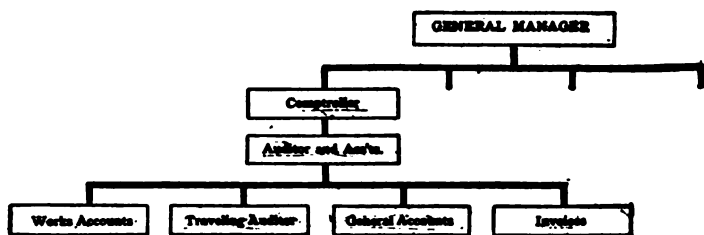
The advertising department also would seem to be properly a part of the sales department. The work of the advertising department is preparatory to selling and consists, on the one hand, of analyses of markets and methods of appeal, and selection of advertising "mediums"; on the other hand, of the actual preparation of copy and lay-out, or of whatever form of advertisement is to be used, and placing it in the mediums selected, whether the medium be the columns of a newspaper or magazine, a Broadway sign, or an automobile on a trans-continental tour.

There are reasons as well why the sales department should include the credit department, although in deference to usage we have shown the credit department as a subsidiary of the financial department. The work of the credit department is in reality a planning for sales—a selecting of the customers to whom credit sales may be made with safety.

The accounting department.—For such detail of the operations of the accounting department as the scope of this book permits, the reader is referred to the chapters on "Accounting" and "Financial Statements." The organization of the accounting department is indicated in the chart shown on the following page.

The function of the accounting department is to furnish records which shall serve (1) to show the condition of the business at any given time, as to its assets and their condition; as to the financial condition of the

business; and as to work in process or contracted to be done; (2) to show whether each operation of the business has or has not been performed according to the rules laid down, and what each operation has cost; (3)



OUTLINE OF ACCOUNTING DEPARTMENT

as a basis from which future operations may be determined.

The problems involved in organization.—From the foregoing brief account of the organization of the basic departments, subject, of course, to modification to suit individual conditions or preferences, together with the preceding discussion of the several types of organization, it will be noted that it is comparatively an easy matter to observe the principles of functionalization with respect to the larger divisions of the activities, but a very difficult matter to observe them with respect to the lesser operations. Particularly within the sales and financial departments, the specialization of the line type, known as departmental organization, is often the most practical. The difficulty in applying the principles of functional organization in full is in that there are many extra-routine operations, or duties, and that the duties themselves are often widely scattered, with respect to the

times and places at which they must be performed. Consequently, considerable discretion must be allowed the officials and their subordinates by whom these duties are to be performed. Ample authority must be given and results rather than conformity to working methods laid down by the management must be the ultimate aim. In short, the conditions are usually most favorable for the use of the line type of organization, with the staff adjuncts, for in such a form of organization authority may most easily be distributed and responsibility most definitely fixed. There is, of course, an application of the law of diminishing returns to the problem of organization. There is a point at which further perfection of the organization as a system ceases to be financially profitable; at this point the cost of keeping the system in operation becomes greater than the value of the complex system. If operations are of frequent recurrence, and are susceptible of standardization, scarcely any cost of standardizing them is too great, but where conditions are so variable that each operation of a given class involves new factors, it may be cheaper to leave the varying operations to be determined at the time by the judgment of a competent employee.

On the other hand, it cannot be too strongly urged that all operations be studied as carefully as possible and that as much knowledge as possible concerning each be accumulated and filed. It is not permissible to do anything in a hit-or-miss fashion unless the operation is of such minor importance that a scientific study would not be justified. With a careful study of ways and means, functionalization and specialization, with their many

economies, may be found practicable to a greater extent than would have been thought possible.

It is worth noting that while shop work has to a considerable extent been standardized and functionalized, the principles applied in shop work have not generally been extended to the other departments. This situation may be explained by the fact that the men in the shop have to do with machines which have little or no latitude in the manner of their operation, and with materials which are subject to well-defined laws. Consequently, shop work rests, more than any other work, upon a fixed or determinable basis. In the other departments, however, the conditions which make for the most productive activity are not so well understood. These conditions can be determined only by means of a study of the human elements of the business as painstaking and thorough as the studies of the physical elements which have made possible the present degree of control over machines and materials. These human elements, obviously, consist of the consumers who form the market, as well as of the personnel of the business proper. In the chapter following something will be said concerning the human elements here referred to and a brief description will be given of the several so-called types of management, as distinguished from organization, with which in these pages we have been chiefly concerned.

CHAPTER XI
MANAGEMENT
(*Continued*)

THE EVOLUTION OF MANAGEMENT

Primitive management.—Primitive, unsystematized management, all too common today, is so familiar as to need no description, further than the pointing out of the features in which it differs most widely from the higher types. In this type of management, there is no discernible separation of the functions of organization and administration or, in other words, of planning and performance.

Perhaps the most noticeable characteristic of this type of management is the lack of record-keeping and the consequent lack of knowledge concerning the business. A typical example of a business under this kind of management would be the small proprietorship, managed by the owner, who feels that he is responsible to no one except himself, and that he can carry in his head as much knowledge of his business as is necessary. To be sure, he will keep accounts with his customers, of uncertain accuracy, and perhaps a spindle-file or a desk-drawer for the bills that he owes, but he will have only a vague idea of the amounts of each class of bills, and will be likely to know nothing of the actual financial condition of his business, except in-so-far as he can judge of it by the size of his bank account or by the general impression he gets when

looking over his stock of goods or other assets. Worst of all, he is entirely without such information as an income statement would reveal. Despite all this, of course, he may be possessed of a native shrewdness which enables him to conduct his business quite successfully, especially when times are "good;" but he will rarely be able to cope with unfavorable conditions or with the competition of better-managed businesses, both of which difficulties are certain to come, sooner or later.

In a business of this kind, plans are made as the work goes along; the manager prides himself upon never crossing a bridge until he comes to it, or, in other words, upon the fact that he does not build a bridge until he arrives at the stream. Surely this is not a policy to be proud of. Judgment, of course, is arbitrary, that is, not based upon accurate knowledge of conditions, but upon whim, prejudice and guesswork. Since there are no records, experience is a doubtful guide. If our manager asks and receives advice, he will not follow it unless it agrees with what he already had in mind.

Record-keeping management.—The first stage in advance of the type of management noted above is that in which records are kept, not, perhaps, with any very definite end in view, but just as a matter of "business." The manager may not make much use of the records except to look over them sometimes to refresh his memory, but being of a methodical turn of mind he likes to have everything down in "black and white." There seems to be a distrust of customers altogether out of perspective with the owner's distrust of his own ability to make his business functions operate economically.

Closely following the mere keeping of records, is the stage in which the records are assembled and balance-sheets are made up, so that the manager may know exactly "where he is at." All too many managers seem to be incapable of going beyond this stage. They are content to exercise their otherwise unaided judgments with respect to whatever problems arise, feeling that by means of the balance-sheet they can tell whether or not the condition of the business will warrant additional expenditures or investments. Thus the records which they keep are no more than a measure of the previous success of the business as a whole, and an indication of the extent to which new obligations may with safety be incurred. There may also be an effort to draw conclusions as to which lines of activity have been most profitable, as indicated by the totals for the several departments. Such conclusions are, however, of little value, since it may be assumed that costs have not been correctly allocated. Especially is this likely to be true of overhead costs.¹

Systematized management.—If we may define a stage of management far removed from the foregoing, and yet far behind the stage represented at this time by scientific management, we may choose the point at which records are not only kept, but are used as an aid to judgment; or, to some extent, instead of judgment. In order that this may be done, a system of record-keeping is adopted in which each operation bears its proper burden of expense and to which its proportionate share of the profit or loss can accordingly be credited or charged. This, of course, implies analysis of the records; and

¹See the chapter on "Cost Accounting."

comparisons of the records, one with another. Separate current operations will be compared, in order that those which are the most profitable can be ascertained; and comparisons also will be made of current records with previous records, so that curves can be plotted which, showing, as they do, the upward or downward tendencies under given conditions, are prophetic as to the outcome of future operations of the same kind.

At this stage the manager's personal judgment will be aided by the records so interpreted, and also by available records of other businesses. Market analyses will be made and business conditions in general taken account of.

Since the business where such an improved and seemingly adequate system might be found would probably be a "progressive" one, if not already large, the manager would find that his own judgment, even aided by the records, was inadequate, at times when decisions were to be made upon questions where special knowledge was required. Accordingly he would add expert engineers or other specialists to his organization, their duty being to make investigations and reports or recommendations upon matters within their respective provinces. In this way the so-called line-and-staff organization comes into existence, the "line" being composed of executive officials and their subordinates, and the "staff" of advisory officials. Recommendations being made by the staff, they would be considered and probably adopted by the management, and made binding upon the line for their carrying out.

It will be noted that at this stage of management the correctness of the methods evolved by skilled workmen is taken for granted. Operations may be analyzed to the

point of recording separately the total of each workman's part in the operation, but analysis goes no further than this. Totals are arrived at by adding together the sub-totals, without ascertaining whether or not the items composing the sub-totals are correct.

It is not to be inferred from this, however, that the incompleteness of the records, with respect to their detail below a certain point, is something that could easily be remedied—something that denotes a carelessness on the part of the management, or a failure to realize the desirability of having the records fundamentally conclusive. Ideal records are obtainable only by means of the methods of scientific management, described hereafter, and there has not yet been time for scientific management to become generally adopted; because, on the one hand, of the actual cost of the installation, which may easily be as high as \$25,000 or \$50,000, involving also several years of disturbance before its benefits are felt; and, on the other hand, because of the vigorous opposition of the labor unions, which foresee in scientific management a menace to their desired control of the accumulated knowledge of the processes of industry.

Systematized management, therefore, is the type most commonly found in the larger and better businesses of today.

Since the collecting and interpreting of all kinds of data which have or might have a significance with respect to the future of the business is the chief duty of management, and since the most important of such data are in the form of reports of the various departments, we may give here an excellent compilation of the rules for good

reports, together with the detailed contents of such reports, taken from *System*, May, 1918.

Rules for good reports.—1. Reports should furnish a complete picture of what the manager should know.

2. Reports should be concrete and self-explanatory.

3. Reports should show whether the business is going ahead or backward, not only as a whole but by departments, and should show not only immediate profits, but should indicate the state of health of the business in general.

Contents of reports.—"The reports should inform the manager as to :

1. Running inventory of stock (by stock; by selling price; by quantities; purchases; used or sold; balance on hand—by departments and by lines; by percentage of sales).

2. Sales (total; by departments; charge; cash, by lines; by salesman; by territories; by percentage to total; by new business).

3. Profits or losses (by departments; by lines; by salesman; by territories; by percentages; by discounts taken).

4. Cost of doing business (total; by departments; by kinds of expense; in dollars and cents; in percentage of sales or costs).

5. Collections (total; percentage of sales; by territories).

6. Outstanding obligations (total; by percentage of sales; by territories; overdue).

7. Goods returned (total; by lines; by territories; by percentage of sales).

8. Balance sheet (assets; liabilities).

9. Financial statement (periodical summary of operations).

10. Trade and business conditions (crops; money market; new inventions; development in trade customs; styles; transportation; weather conditions).

11. Efficiency of employees (by profits; by departments; percentages on standards of work and conduct; and complaints).

12. Advertising (total; by departments; by mediums; by results).

13. Cash (receipts; disbursements; anticipated payments).

14. Rates of turnover (on total business; by departments, by lines; day's sales on ledger).

15. Production (by amount finished; under way; not started; time lost; by total cost; by unit cost; by labor cost, direct and indirect; by material cost; by overhead).

16. Mark-ups and mark-downs (total; by departments; by percentages)."

All such reports should be made on standardized report forms or "blanks," so that the manager may be sure that each caption in successive reports includes the same data. This is necessary not only in order to save time, but for the sake of accurate comparison of records for succession or corresponding periods. When such a comparison shows an unfavorable condition the manager may take such measures as may be necessary to provide a remedy.

SCIENTIFIC MANAGEMENT

The Taylor System.—The latest stage in the evolution of management is represented by the Taylor system,

also known as scientific management.¹ In this system not only is interpretation of records substituted, so far as may be possible, for unenlightened judgment, but the records themselves represent performance in harmony with fundamental principles. The testimony of the records, accordingly, becomes incontrovertible, and the decisions of the manager, like those of an upright judge, are determined by the law and the evidence.

In order that performance may be in accordance with fundamental principles, each operation is taken apart, so to speak, and studied in detail, and built up again in the "one best way." Incidentally, it was observed by Mr. Taylor that in order that a task may be performed in the best possible way, it is necessary to plan it in detail before actual performance begins; thus it is a feature of scientific management that planning and doing be regarded as separate functions.

In our approach, then, to the brief consideration of scientific management which follows, it will be remembered that the essential principle of this system is that the "one best way" must be sought for through experimentation of laboratory exhaustiveness and scientific accuracy.

What is meant by the term "scientific management."—The term "scientific management" is to be used only to designate any type of management in which are not only incorporated, but actually applied, the prin-

¹ To Dr. Taylor belongs the credit of the practical working out of scientific management methods, although methods somewhat similar to those of the Taylor System were introduced independently by other managers, both in the United States and in France.

ciples of management formulated by the late F. W. Taylor.¹

The fact that a manager attempts to be scientific in his methods does not constitute his system a scientific management system, for the scientific spirit alone is not sufficient. The road to bankruptcy is paved with good intentions.

The preliminary stages of scientific management.—If an industrial engineer were called upon to install a system of scientific management in an establishment, the first thing he would do would be to make a thorough-going study of the business—as a whole, and also in detail. From an analysis of the needs and purposes of the business, he would plan a reorganization of its parts in their relation one to another. The new organization would provide as far as possible for a functional division of labor, including a functional management of labor.²

Since it is fairly well known what operations can be performed by machines, with a minimum of human supervision or labor, the most suitable machines, if not already in use, would be provided for, and the situs of each would be determined. These preliminary studies or plans being made, the problem to be solved would be the grouping of all the human or labor functions into duties or “tasks,” and the providing for the doing of each task in the “one best way.”

¹ While the methods of scientific management had their beginnings about 1890, the recognition of scientific management as a distinct type did not come until the time of the Railroad Rate Hearings in 1910. At this time a committee of managers selected the term “scientific management” to designate the “system.”

² See “Functional organization,” p. 201.

The "one best way."—In order that an operation may be performed in the one best way the following conditions are necessary, substantially as set forth by Dr. Taylor:

1. Standardization of the operation, including that of the machines and tools used.
2. The fitness of the workman.
3. A spirit of co-operation on the part of the workman.

Of these three conditions, it is difficult to say which is the most important, or which is the first. All are essential, although the control of the human element is perhaps uppermost in the mind of the manager, since the standardization of the operation, resulting in a standard task, is a problem solved once and for all, except where the invention of improved machinery or the discovery of improved methods leads to a readjustment. The control of the human element, however, is a problem that requires constant attention, and is probably the chief problem of management. We may consider the means of securing the above-named three conditions, taking them one by one in the order in which they are mentioned.

Standardization of the operation, or formulation of the "standard task."—Contrary to the pardonable contention of the workman, it is impossible for the workman himself, or for generations of workmen, to hit upon or develop the best methods of performing their work.

In the first place, the doing of any given task by any given workman must be co-ordinated with the doing of

other tasks by other workmen; and this is a management function, over which the workman has no control.

In the second place, any operation consists of a number of separate, although related, component elements. The most efficient combination of these elements or movements can be determined only by means of experimentation under laboratory conditions. Here also the workman has neither the equipment nor the special training which are necessary for the discovery of the most effective combinations. These considerations alone are sufficient to indicate that it is out of the question, from the standpoint of efficiency, for the workman to insist with any reasonableness upon the use of his own traditional methods.

Time-and-motion study.—"Time-and-motion study" is the principal means whereby the standard task is evolved; and implies, along with the study, the construction, or synthesis, of the task.

First, the operation to be performed is analyzed or resolved into its separate elements. When the operation is thus "taken apart" it is studied and timed in detail, with the aid of a stop-watch. Other devices also may be used, such as an adaptation of the camera with a stereoscopic lens, and of the moving-picture camera. Each movement or element in the operation is studied as a separate unit. After all possible variations have been tried and timed, the one is selected which takes the least time or the least exertion. The relation of each movement to the preceding and following movements is, of course, taken account of. Every waste movement or element is eliminated and the most efficient ones are re-

tained. These retained elements are preserved and filed as "unit times." When the complete operation is built up of these individual best elements, it is known beyond question that the operation represents the "one best way," with respect to that particular operation, wherever or whenever it may be found, and it is fixed in the system as a "standard task."

The standard task, of course, is constructed with the ascertained best speed of performance, including rest-intervals, so that it may be performed consistently by a fit workman without detriment to his health, and without undue discomfort. This phase of the task is considered at some length under "fatigue." (See "The Control of Labor.")

It is assumed in the foregoing description of time-and-motion study, that the tools or machines used in the course of the study are those which have been proved, by scientific experimentation, to be the best for the purpose in view. The best tools, of course, may be selected by a similar method of experimentation. A famous example is the best-size-of-shovel study made by Dr. Taylor himself.

Taking a gang of average workmen, a number of sets of shovels were provided, the smallest shovels holding less than 20 pounds and the largest more than 30 pounds. It was found that there was a remarkable variation in the amount of material moved with shovels of different sizes. The workmen were given first the set of largest shovels. After a time sufficient to establish conclusive results, the next smaller set was substituted, and so on until all had been tried. The amount of work done in-

creased steadily until the 21-pound shovels were used, after which time it decreased as consistently. It is known, therefore, that whatever be the material to be moved, a shovel holding about 21 pounds is the size which should be provided for the workman. Since some materials are lighter than others, the capacity of each size of shovel, with respect to the various classes of material, must be readily ascertainable.

It may be noted how many factors must be considered even in such a comparatively simple kind of work as shovelling. The height of the lift, the distance the material must be moved, the length and shape of the handle, the shape of the shovel, the position in which it is held, the velocity and course of the arm movement, the posture of the body—these are only a few of the more obvious considerations.

Prior to the development of scientific management such elements as these received little, if any, consideration. The practical value of correct posture and movement, however, have long been recognized on the athletic field.

Another interesting illustration of the results obtainable through time-and-motion study, which serves also to indicate the impossibility of the finding out of the best methods by the workmen themselves, is the series of experiments made by Dr. Taylor in the cutting of metals. Beginning the work with the expectation of completing it in six months, he finished it in twenty-six years, at a cost of \$200,000; but in the course of the experiments (which were made in collaboration with Maunsel White) high-speed steel was discovered which, in normal times,

is estimated to have been worth many hundreds of millions of dollars to the industry. The value of the Taylor-White process for war purposes may perhaps be calculated in billions. In these experiments, in which 800,000 pounds of metal was used, the problem involved not only the speed, the feed, and the depth of the cut; but also the design of the cutting tools and the material of which they should be made; and the development as well of a steel which could be cut most rapidly without the sacrifice of desired service qualities.

Preservation and use of knowledge gained by time-and-motion study.—Obviously, when by means of time-and-motion study have been discovered the best methods of performing each operation, this knowledge must be preserved and used.

The elemental unit-times and unit-motions, and the tasks into which they have been correlated, are, in reality, wares which must be stored and distributed as they are needed. The preservation of these records and the adopting of them as models for future operations is called standardization.

How, in actual practice, may the standards be applied? The workmen could not carry them all in mind, and, besides, the workmen are always coming and going. The standards, therefore, must be kept in a place of their own, which is called the planning department. Here the standard instructions are kept on file, and when any work is to be done the standards pertaining thereto are made the basis of an "instruction card," showing in detail all that is to be done. This card is sent to the workman for his guidance; personal assistance, where re-

quired, is given by a foreman in the shop. Another foreman supervises the work as it progresses, another inspects it, and still another checks it up and calculates the cost.

Not only do the standards serve as models for like operations, but when a new task is to be constructed many elements of the new task can be taken directly from the file of unit times and movements, obviating to that extent the need of a new time-and-motion study for each new task. This may need no further explanation, but for the sake of an apt comparison, the unit times and movements kept on file are like a set of building-blocks, of which a variety of houses may be built.

As to the division of labor, in the distribution of tasks, reference may be made to "Functional Organization," in the preceding chapter.

It will be noted that the concentration of the work of planning in a separate department, while it might seem to increase the amount of "indirect labor," causes only an increase in the number of "indirect laborers," which is not at all the same thing. If the work were not done by the clerks in the planning department, some kind of planning would have to be done by the foremen and the workmen in the shops, under conditions far less favorable in every respect, at the expense of the time of the machines, which would be idle meanwhile, and at the loss of the workman's time, taken from "productive labor," while he stopped from time to time to make his plans.

A further application of time-and-motion study, is in the handling of stores and supplies, including tools, re-

sulting in their delivery at the time and place where they are needed. Standardization here involves a classification, with symbols for each item, and a standard method of handling and distribution.

Standardization.—Standardization means simply finding the best for the purpose desired and keeping it until we get something better. The principle of standardization, if it may be called a principle, is perhaps the most important business discovery of the century. Its effects are only beginning to be felt outside of individual businesses, but the signs of the times indicate that before long we shall have interbusiness as well as intrabusiness standardization.

Standardization takes, practically, two forms: (1) of materials, (2) of methods.

A manufacturer of automobiles, for example, having determined upon, or standardized, his policy as to the grade of car he will build, and the class of buyers he will appeal to, must then determine and adopt as "standard" in his own business the qualities or grades of material which he will use in each part of the car in order that cars of uniform quality can be turned out profitably at the price at which he has decided to sell them. Every piece of wood or steel must be tested and found to conform to the specifications; the finished car is tested and must develop as much power and run as smoothly as the standard requires.

Just as materials must be tested, so must methods be tested in order to find which is the best. Scientific management has discovered means, described above and known as time-and-motion study, of constructing best

methods by resolving an operation into its original elements and building it up again piece by piece, retaining only the most economical elements. An operation so constructed is adopted as "standard." The manufacturer, accordingly, builds his standard car out of standard materials put together by a standard sequence of standard individual operations.

The secret of the success of a very well-known manufacturer of low-priced, serviceable cars lies in the fact that he has adopted *in toto* the principle of standardization. Not only does standardization lower his manufacturing costs, but it enables users of his cars anywhere in the world to buy a new bearing or a connecting rod, or for that matter a new engine, for a very few dollars at the nearest hardware store, with the certainty that it will fit. Standardization under scientific management has given this manufacturer one of the largest incomes, it is said, which any man has ever enjoyed.

It is interesting to look forward to some of the possibilities of standardization in the business life as well as in the social life of the future.

The first thing that impresses us is that standardization presupposes an organization and a primary—that is, a centralized—authority, by which authority any proposed change in the standards must be approved and accepted before it may be adopted. We have seen that a business organization is created under what we may call the "primary authority" in the organization, which primary authority is the result of the pooling of the original authorities, and the placing of them in the hands of the administrator or manager of a business.

The laws of the nation are no more than standardized social customs, codified by the primary authority which we call the government. No new law can be added to the code until it has been enacted and incorporated in the standards by the proper authority, no matter how obvious the improvement may be. It is needless to enumerate the advantages of having a set of laws to guide our conduct. We do not feel that laws hamper our individual progress and aspirations. Without a centralized authority, however, there could be no laws, and our best customs could not be standardized and perpetuated. As it is, we are able to hold what we have gained, until the standards again can be raised. What is a good law for one generation may be a bad one for the next, because with the aid of the obsolete standard a new one has been made possible. We have adopted the principle of "progressive standardization" in our government.

Standardization as a national habit.—It is possible, however, for standardization of material and processes to become a national habit. Just as thrift is the habit of the Scotchman, and profligacy is the habit of other peoples, a passion for standardization may well become the national habit of Americans. Such a desideratum can come about only through a long and gradual process of education in which one profession after another will become a participant. At the outset the way may well be blazed by the engineer, to be followed by the lawyer, the accountant, and the executive himself.

Just what this would mean and how it would come about, is indicated in a publication of the American Exchange National Bank of New York City. "Popular con-

sent to eliminate waste through standardization is essential, however, and it is just as necessary that the average man be made to understand the advantages of eliminating waste in this way as it is that he have the habit of saving. Objectors to standardization usually appeal to the prejudices of the average man; he is told, for example, that under standardization the women would all wear hats of the same design and coloring; that all clothing would be cut to a uniform pattern and that in a short time we would all be living a routine existence, moving about in regimented masses and to the best of time clocks. The term standardization, as it is applied in practice, has no such significance as that; in practise its significance is largely what the word implies—dimensional.

“The engineer who refers to standardization—and it is the engineer who is the principal advocate of the thing called standardization—is thinking of a pipe or a bolt on which the threads conform to a fixed standard, thus eliminating the necessity for carrying large stocks of pipes and bolts whose only difference is in the width or direction of the thread. The manufacture of mattresses is an advocate of standardization in bed sizes, because the limitation of beds to standard sizes allows him to reduce the number of sizes he must carry in his stock of mattresses. The same principle runs through all industry, and such simple and necessary standardization as here outlined, if generally followed, would, perhaps, annually release as much capital for employment in other fields as goes into the savings banks each year.”

Not long ago, one-price stores were unheard of. Not much later, they were a novelty. Today the term “one-

price store" is almost obsolete, the advertising value of the sign "One-Price Store" has disappeared, because all reputable stores now are one-price stores. The public had grown tired of the useless labor of bargaining over individual purchases.

Is the public in these days not growing tired of wondering which store is the best, which automobile is the best, which typewriter or sewing-machine or phonograph is the best? Are we not getting ready for standardization—with the best goods, of whatever class, to be had anywhere at a uniform price? Should we not like to own an automobile, or a harvester, or a typewriter, that combined the best qualities of all, and was made by any company that cared to make it, but, engaging in its manufacture, was compelled to make it according to the standards, so that repairs could be had anywhere and men skilled in operating or repairing it could be found anywhere; so that we should be saved the waste labor of worrying over quality and price? For that matter, it would not be necessary to provide against the making of unstandardized staple articles; they could not survive in competition with the others.

Would such a standardization tend to bring human existence to a "dead level"—flat and uninteresting? He who imagines that has not stopped to consider the inexhaustible richness of the human mind. In the ascent through civilization the highest peak has not been reached—probably never will be reached, for it may be that there is no highest—that the scale is infinite.

Progressive standardization means only that we say: "This much has been accomplished. Let us not spend

our time in solving the same problem again; leave it in plain figures, on instruction cards and tables of specifications, for the guidance of those who do the routine work, and we shall have more time to spend on problems yet to be solved."

What is advocated here, then, is standardization of the accomplished. Instead of lending itself to senseless variations of the necessities of life, creative imagination will devote itself to satisfying new demands. Healthy competition will develop variations in these new supplies until the one best product or the one best way is found. An intelligent public will then automatically standardize that one best product or method by demanding it to the exclusion of others and productive effort will then be released for new fields.

Fitness of the workman.—The second of the conditions which we have noted as being requisite for performance in the one best way, is that the workman shall fit the task, the task itself having been devised so that it will fit the special kind of workman who is to perform it.

In the chapter on "The Control of Labor," something is said about the work of the employment department in the hiring of men. There has been a great development in this phase of business management since the days when, as the story goes, men were advertised for at a factory which was to open on a certain day. At the appointed hour a crowd was waiting outside and when the doors opened the men rushed in, each of the fortunate ones taking possession of a machine, like homesteaders at the opening of a tract of government land, and so

the places were filled. It is now the custom, however, to subject all applicants for work to a highly informative preliminary examination, by means of which the probable fitness of each for a special kind of task can be determined. That health is a requisite, whatever the task, goes without saying.

New men are shifted about until the place is found for which they are best suited, in case the first assignment does not prove satisfactory, and they are then carefully instructed in the methods of working. Some concerns put new men through a course in a training department before they are assigned to regular work.

For each important position, moreover, men are specifically trained as alternates, so that the possible absence or discharge of the regular employee will be felt as little as possible.

The underlying principle or policy is this: that for each kind of work, there should be secured the most suitable kind of workman, the considerations being mental and physical fitness, natural aptitude, and training. With respect to these considerations men are selected to fit the machines and methods of the various tasks. Granting, then, that in this way the best men of the respective classes are assembled, and their possibilities and their limitations studied and understood, the machines and methods are modified to make them fit the average workmen of the respective classes.

The human element, as we have noted above, is in actual practice the material which management is most actively concerned with. Machines and methods can be adjusted almost at will, but the average man of a given

class, fitted for a given kind of work, is of certain consistent and impassable limitations.

The spirit of co-operation.—If a separation may be made of the means whereby a spirit of co-operation on the part of the workman may be secured, these means may be classified as being:

1. A wage of relative contentment, proportioned to individual performance; or to group performance, if individual performance cannot be measured.

2. Unification of interests of management and men, which makes possible the substitution of leading for driving.

A "Wage of Contentment."—By a "wage of contentment" is not meant a wage as high as the workman would like to have—for there would be no limit to the amount, in such a case; but such a wage, in which working conditions are also taken account of, as the workman will recognize to be fair, and receiving which he will look for an increase in his income in promotion to a better position—and not to higher wages for the same work, to be obtained perhaps through coercive measures, such as strikes.

Men work for wages, but that is not all they work for and, far less, all they live for. We see them on every hand leaving the comforts of a possible routine life to explore and to experiment. Dependence, whether sought out of necessity or imposed by authority, is not the human goal. Opportunity to advance is more eagerly sought than the assured comforts of mediocrity. An alert interest in personal advancement will do more than the lure of socialized recreations. An opportunity to gain independence

and to cultivate self-respect is the first consideration. After this may come welfare work in its various forms, accepted by the men in the spirit in which it is offered. Even illiterate workmen are surprisingly astute in estimating with the sureness of instinct the innermost feelings of their employer.

Leadership.—Men are almost always willing to help, but are almost never willing to be made to help. They have an aversion to being exploited or “used.” How often have we heard someone say “I am a man who can be led but not driven.” The speaker imagines that this is a characteristic which somehow sets him off from the common herd, but the truth is that we are all of the same temperament. When we are driven, we are “used,” but when we are led, we are partners in a common cause.

A young man came into the office of an old friend of the family, and said: “Judge, I am trying to put over a little deal, and want you to help me.”

“Certainly, my boy,” answered the amiable old gentleman. “I knew your father, and will do anything in the world for you.”

“Well, Judge, it’s like this: You know these people quite well, and I thought maybe I could kind a use you as a gouge——”

“Use me! Use me, as a gouge?” shouted the Judge. “There is nobody on earth that has the privilege of using me for anything!”

Former Sec. of Labor Wilson, commenting upon the difficulty of getting men to accept the things provided for them by welfare work, says that a man will rather live in a log cabin of his own, with the poorest food and the fewest comforts, than in a well-appointed house belong-

ing to the company that employs him. This is nothing new in human nature. Dante expresses the same idea when he says, of the man whom fortune has cast out of his former possessions: "You will find how salty is the bread of strangers, and how hard it is to climb other people's stairs." If men can feel, however, that in working for the business they are working for themselves, a true basis is provided for the leadership which is necessary for efficient co-operation.

The end of the matter is that the time has come in the evolution of business when management must shift its viewpoint, no longer regarding workmen and the public as something to be "used" or exploited for the benefit of the capital interests of the business, but regarding itself as the means whereby all the interests represented are united in a mutual purpose. This imposes upon management a new responsibility.

The new viewpoint.—We have seen that the proper duty of management is the making of the most profit for the "employers." The question now is beginning to be asked, who are these employers? The actual employer of the manager or administrator, from the new viewpoint, is not the capitalist, but the business which he manages; that is, the business as a distinct entity. The capitalist has hitherto held a controlling interest in this business, and has therefore assumed that the entire business existed for his aggrandizement—that all the profit was to be his profit. Now come, so to speak, the minority stockholders—labor and the public—and call for an accounting. They may not be disposed to say that the shares must be reapportioned; but they do hold that if

the capitalist owns, for example, 51 per cent of the stock, he should not be permitted to take 75 per cent or 90 per cent of the profits. In other words, it is coming to be recognized that labor and the public have a direct interest in every business enterprise and that the management should represent not the capitalist interest exclusively but the several respective interests jointly.

The most enlightened holders of these respective interests realize that a business must be managed impartially, with a view to the interests of all, if it is to make the most profit for any or each. A disproportionate advantage to the public, as when railroad charges are too low, will cause capital to withdraw; unreasonable demands of labor work injury to all concerned; greed on the part of capital drives away the necessary labor and the necessary support or patronage of the public.

At this point, we may take note of the often-heard contention that since capital takes the risk it is entitled to the profit. Put in a more forceful form, the argument is that the lure of profit is necessary to induce capital to take the risk of engaging in business. It is probably true that the hope of an unusual profit does lead capital to take the initiative in developing new enterprises, but it is also probable that the proportion of the risk borne by capital alone is overestimated. Labor and the public also run a risk, less apparent because more widely distributed. Again, if capital takes a risk and loses, it puts the blame upon "causes beyond control." If it wins, however, it attributes success to its own farsightedness and business ability, and claims the profit as a reward. Why should it not be equally just to attribute success to

causes beyond control; or loss to the absence of far-sightedness and business ability? The point is this, although the matter is not of great importance—that loss may be looked upon as the penalty of incompetence, of engaging in an enterprise without having made the necessary preparation. If this be accepted as the explanation of business losses, the “risk” argument fails. For the sake of illustration, the citizen who violates the law is specifically punished, but the one who obeys the law is not specifically rewarded, but is compensated by the general advantages pertaining to living in a law-abiding community, to the maintenance of which he contributes. We do not say that a man is entitled to a medal of honor because by being a citizen he runs the risk of finding himself a violator of the law and in danger of being put in prison. This illustration, of course, is not meant to be taken as representing precisely a parallel case, but only as elucidating the line of reasoning suggested.

“Under New Management.”—It would seem, then, that business is about to “reopen under new management.” The new management will represent the business as an entity, making as much profit as possible for the business and, consequently, returning the largest dividends to capital, the highest wages to labor, and the greatest benefits to the public. This it will be enabled to do by creating or rather making apparent the already existing solidarity instead of diversity of interests, so that leading, or guiding, may be substituted for driving.

The basis of justice upon which the new management is founded has already been explained—it is no more,

nor less, than the principle of the square deal, the returning to each owner of the business a profit in proportion to his contribution. The basis of expediency also has been pointed out—the greatest production, and so the most profit, can be secured only through the co-operation of all concerned, which co-operation can be had only by a recognition of the oneness of the respective interests. Besides justice and expediency, we have necessity as a basis of the new management, in that a centralization of authority and control is imperative, for only from a single viewpoint can the necessary correlation and co-ordination of the functions of the business be made.

Business, under the new management, thus becomes a truer democracy than it has been before. While efficiency demands an autocratic leadership or control, this control is not arbitrary, but is exercised in accordance with fundamental principles, or laws, to which the management is subjected equally with the workman. In serving these laws, we are serving our own ends. There is no stifling of personal ambition, but each may freely rise or sink to his own level—rather, each will be forced to his own level.

Under this system, of course, the law of the survival of the fittest must persist—there is no way to repeal it, but we come to understand better, perhaps, what fitness really means. The most successful manager, from the new viewpoint, is the one who is best fitted to assemble and interpret all obtainable information about the business and its several owners, and who has the sense of justice, which enables him, in the light of this knowl-

edge, to dispense on every hand what is generally recognized as the "square deal." This is the kind of manager that men will work for as if inspired, that investors will entrust their money to, that public opinion will support in policies looking to concentration rather than decentralization of the control of industry, and that presidents will appoint in charge of the nation's business when a crisis demands that something be accomplished immediately.

Those who have seen, some more clearly than others, the coming of the new management, have described it as being not an evolution but a revolution. What they mean by this is that it does not necessarily involve any change in the present structure of business; all the necessary elements are about us, as close as the air we breathe. It is a sort of spiritual conversion, following which we look upon the same world through different eyes—it is merely a change in the point of view.

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CHAPTER XII

OFFICE MANAGEMENT

Office management defined.—In order that we may have a clear idea of what is involved in office management, it is necessary that we distinguish carefully between office management and management in general. The office manager as such has no more to do with the policies of the business, or with the functions of producing, selling, financing and accounting, than the manager of a telephone system has to do with the business that is transacted over the wires of the system. The office renders an indispensable service, of course, but this service includes only the providing of a system of intercommunication between the departments and subdepartments of the organization and between the organization and its environment. The great mass of clerical work, commonly known as "office work," is no more than the reducing of the various kinds of data to writing, for the present or future instruction, guidance or information of those connected with the business organization.

What is an "office," in the common usage of the term? It is the place where a man regularly transacts his business—where letters, telegrams, telephone calls and other messages can reach him, and from which he can send them. Conveniences are provided for the exchange of personal communications—"deals" are made, confer-

ences are held, subordinates are summoned to receive instructions or to give accounts of how they have succeeded in carrying out instructions given previously. Here also is the "memory" of the organization, in the files of correspondence, records and statistics. The office, then, may be regarded as being, essentially, the system whereby those in authority may receive information as to current and past operations, and by means of which system, having made their decisions in the light of such information, they may direct and keep in touch with future operations.

Office duties.—The duties included in office management may be regarded as being:

1. Providing suitable office rooms, equipment and supplies.
2. Providing a competent office personnel.
3. Planning, assigning and supervising the performance of the office tasks.

"Lay-out" of the office.—The "lay-out" of the office includes the arrangement of the office with respect to its departmental divisions and subdivisions, with due regard to the possibility of expansion in the future, and with regard also to the problems of lighting, heating and ventilation.

In estimating the amount of floor space required, it is customary to make an allowance of about 100 square feet for each employee. The number of employees can be estimated by an analysis of the probable amount of work to be done, reference being made to available data as to what constitutes a fair day's work for an em-

ployee of a given class or grade.¹ Office conditions are so variable that standards and methods will have to be worked out, as a rule, for each establishment.

The necessary space being provided for, the first consideration in the apportionment of the space is that of the "routing" of the work—the progress of the most important tasks from one department of the office to another, as in the handling of an order which arrives in the mail and which may have to pass through the sales department, the credit department, the manufacturing department, the shipping department and the accounting department. The departments should be arranged, other things being equal, so that the lines of communication between them may be as short and direct as possible. The sequence of operations should be on the same principle as that which governs the sequence of operations in scientific management shops, where there is little or no retracing of steps, the work progressing as nearly as possible in a straight line or continuous curve. Guesswork must not be depended upon. The system must be put into writing, and comparisons must be made between all reasonably possible variations of arrangement

¹ The following standards may be taken as representative of those used in well-managed offices. The table is taken from "Standardizing Office Work," *Industrial Management*, July, 1917.

| <i>Type of work</i> | <i>100 per cent standard</i> |
|------------------------------------|------------------------------|
| Phonographic transcription | 182 square inches per hour |
| Form typewriting | 200 square inches per hour |
| Addressing form (three lines) | 180 addresses per hour |
| Machine addressing, hand feed | 3600 addresses per hour |
| Circular enclosing (one enclosure) | 1200 per hour |
| Hand folding letter size sheets | 850 per hour |
| Sealing | 2400 per hour |
| Stamping | 1600 per hour |
| Filing cards alphabetically | 500 per hour |

until the lay-out is discovered which will involve a minimum of going to and fro and which will insure, as far as possible, the elimination of all other forms of duplication of effort. "Every little movement has a burden of its own."

Each official of any importance will have his individual office—a private room or a subdivision of a general office. In each such office there will be a certain amount of office work which will be directly or indirectly under the care of the office manager as well as that of the "tenant" of the office.

Besides these individual offices, there will be, in many cases, a large room or set of rooms where many clerks, typists and other office employees are assembled. In such a room the desks are most conveniently arranged in double rows, with aisles between, so that clerks leaving their desks will not disturb each other.

Lighting.—The fullest use should be made of sunlight for lighting the office, with care that private offices do not shut off the light, and that the kinds of work which require the best light are done at the desks which are most favorably located in this respect.

When artificial light is to be used, there may be a choice of three lighting systems—direct, indirect and semi-indirect.

The "direct" system—in which the light falls directly on the working plane—is preferable where the work is unevenly distributed throughout the office, or where the walls and ceiling are of a dark finish. Care should be taken that none of the lighting units are in the line of vision, or bright enough to cause a glare.

It is customary, in this system, to provide an individual lamp for each desk.

The "indirect" system is that in which the light from the units is cast upon walls and ceiling and thence diffused over the room. This system is about 50 per cent. more expensive in operation than is a direct lighting system.

The "semi-indirect" system is that in which the lighting unit is protected by a translucent but not transparent globe, through which part of the light falls directly upon the working plane, the remainder of the light being diffused from walls and ceiling as in the indirect system.

If electric light is used, the units ordinarily employed in the systems described above are: for direct lighting, lamps of about 60 watts; for indirect lighting, 250 to 500 watts; for semi-indirect, 100 watts.

Sufficient light, without glare or reflection from polished objects, such as highly polished furniture and the like, is essential for the performance of efficient work. Bad lighting causes eye strain, headache and lessened capacity for work, to say nothing of the irreparable injury to the employee, if his sight becomes impaired.

An incidental effect of bad lighting is that upon sanitary conditions. Light, other than direct sunlight, may be of no service directly as a destroyer of germs, but, by making visible any accumulations of dirt in which germs may harbor, it leads to their removal. Dirt, like any other evil, must be seen before it can be dealt with.

Ventilation and temperature.—Ventilation is important, but less important than temperature, since the devitalizing effects of bad ventilation are due principally

to the difficulty the body has in maintaining its normal temperature of 98.6 degrees when the air is humid as well as hot, which it becomes when there is insufficient ventilation. The body normally produces a surplus of heat, which surplus it gets rid of in two principal ways. If the surrounding air is cool, it will absorb the heat directly. If the air is warm but dry, the moisture perspired will be evaporated, in which process heat is absorbed very rapidly by the air. Any one who has worn a rubber raincoat in warm weather knows how difficult it is for the body to get rid of its surplus of heat when covered by a non-porous material which precludes evaporation. Even a slight movement of the surrounding air, however, presents to the surface of the body a cooler air, capable of absorbing more heat, and also a drier air, capable of absorbing more moisture. In a badly ventilated room, then, keeping the air in motion is a fairly good substitute for changing it; the ideal condition, however, is one where there is an abundance of "fresh" air at a temperature of 68 degrees.

While excessive humidity is the danger usually to be guarded against, very dry air is also injurious. Warm air can absorb more moisture than cold air, so that when air of a temperature of say 25 degrees is taken into a room and heated to 70 degrees, the humidity falls to the point where the air is too dry. Every one has noticed how the breathing of very cold air tends to "parch" the throat. This is because when the air is warmed in the lungs its moisture-absorbing power is many times increased, so that it takes up the supply of moisture from the exposed surfaces more rapidly than

it can be replenished. It is necessary, accordingly, when introducing very cold air into a room, to provide means for adding moisture to the air. An old-fashioned school-room practice which many of us may be familiar with is the keeping of a pan of water on the heating stove. In larger-scale operations, moisture may be added to the incoming cold air by mixing with it the "exhaust" steam from the heating plant, or by other suitable means.

Noise.—A detail of exceptional importance is the elimination of "distracting" noises. It is to be borne in mind that the most alert and useful employees are the very ones most likely to be affected by noises that "take their minds off their work." The general or routine noise of the office is not distracting, more than is the constant sound of traffic in the streets. It is the unusual noise that should be inhibited. The instinct of gregariousness, as well as that of curiosity, prompts the normal human being to listen to conversation, even against his (or her) will. Conversation, therefore, in an office should be reduced to the absolute minimum.

Office furniture and equipment.—Applying the principle of standardization to office furniture and equipment, it can readily be seen that uniformity is desirable, wherever working conditions are similar. In the item of desks, for example, standardization would mean that purchases in quantity could be made, at a saving in cost, that the work of the clerks using desks for similar purposes could be standardized with respect to the manner of performance; and that inspection of the work and of the condition of the desks would be greatly simplified.

Flat-top desks, of the "sanitary" type, are preferable

to the old-fashioned roll-top kind, unless one has a special need for the high front, as had a lawyer feudist in the South, who while in his office always sat facing the door, behind his roll-top desk, the drawers of which contained a sawed-off shot-gun and two Colt's 45's.

It is impossible here, of course, even to enumerate the many other articles of office furniture and equipment—chairs, filing cabinets, book-cases, typewriters, dictaphones, tabulating machines, and the rest. These should be standardized wherever possible. Attention may be called to the fact that standardization, however, is not something that is accomplished once and for all, but that it is merely the selection of what is best, in materials or in methods, and the consistent use of what is best until something so much better can be found that it will pay to discard the old and adopt the new. This is what is meant by "progressive" standardization.

With respect to certain articles and processes, the standards can be revised at little cost, but in other cases the advantage gained would not compensate for the expense of making the change. This fact, of course, does not justify the office manager in neglecting to keep himself informed of whatever progress is being made in the development of office equipment, for only by knowing what the new things are, how much they would cost, and how much they would save in operating expense can he be in a position to make a revision of the standards at the proper time.

Providing an efficient office force.—The general problems of wages and labor are considered in the chapters of this book under titles which indicate the

nature of their contents. The problems of office labor are not essentially different from those of labor in the various departments. At the risk of anticipating what is set forth in these special chapters on wages and labor problems, we may say that labor should be hired by specification, just as the purchasing agent makes his purchases by specification. When a buyer purchases ink, for example, he does not say to the dealer: "Send me some ink." He does not wait until the ink arrives before finding out whether it is writing ink or copying ink, or whether it is blue or black or violet in color. He does not wait a year or more to ascertain whether the ink is of a permanent hue or whether it will fade. He makes out a bill of specifications to which the ink must conform; he makes his analyses or experiments before purchasing, not after. Yet in the now-becoming-obsolete system of hiring employees haphazard and analyzing them afterward, the greater number must prove unsatisfactory and transient, because they do not conform to the requirements.

It is true, of course, that human material is much more adaptable to modified conditions than is inert material. At the same time, any given individual is naturally fitted for the performing of certain duties, and naturally non-fitted for the performing of others. The problem of the employer is to ascertain by a series of mental and physical tests what positions applicants for employment are naturally fitted to fill, and having selected the fit applicants, to give them every assistance in performing their duties. A course of training may be given before the applicant is assigned to regular work.

Classification of office tasks.—Keeping in mind our explanation of the “office” as being the system of intercommunication between the departments and subdepartments of a business organization and between the organization and its environment, we may say that the work of the office comprises the following larger subdivisions:

1. The receiving of incoming communications and transmitting them to the proper authorities.

2. The transcribing and sending of outgoing communications.

3. The clerical work of preparing interdepartmental communications.

4. The assembling of data, principally in the files of correspondence, records, and accounts.

Incoming communications.—Incoming communications may be classified as follows:

1. Letters and telegrams.

2. Telephone messages.

3. Written reports from within the organization.

4. Personal reports and communications.

In a large office the volume of incoming mail is enormous. A certain Chicago mail-order house, for example, receives mail in such quantities that the letters are weighed upon arrival in order that an estimate may be made immediately of the amount of money they contain and of the number of orders that must be filled during the day. The number of letters is so great that it is known almost exactly what the ratio is between the weight of the letters and the amount of money contained in them. A million dollars is sometimes received in a single day.

The labor of handling and distributing incoming mail may be divided into many separate operations, such as opening; caring for cash and other enclosures; sorting according to departments, and also as to importance and time when attention is required; looking up records of customers whose orders are received; interpreting the orders; making additional copies of orders; passing orders to the sales department, and the handling of complaints.

Standardization of practice is required in these, as in other tasks, both in respect of the amount of work to be done and in that of the manner in which it is done. The heads of departments must receive whatever communications are of a certain character or degree of importance; other communications can be handled in "routine" practice.

Outgoing communications.—Outgoing communications would be classified under practically the same heads as the above, but in the sending or delivery of messages there are additional tasks involved. These additional tasks are, principally, in the writing of letters, including the taking of dictation; typing; compilation of prescribed form or "paragraph" letters; stamping and mailing; and in the making of duplicate copies, by means of carbon sheets, letter presses and other devices. In mailing, the items must be separated into special delivery, domestic and foreign mail. Most of the work may be done in the general office, where facilities of all kinds are accessible, but part of the work will be done in the private or special departmental offices where the communications originate.

In order to save postage, outgoing mail to branch

offices will be accumulated and sent in a single envelope, as will letters or other communications sent to salesmen and other correspondents. The same principle will apply to the sending of telephone and telegraph messages; various matters can be communicated in a single message or night letter.

For the carrying of written messages between departments and for miscellaneous purposes of a like nature, the "office-boy service" is maintained.

Interdepartmental communications.—Under interdepartmental communications we may include the preparation of instruction cards, requisitions, purchase orders and the like—also the preparation of invoices and other shipping papers, which when completed are included with the outgoing communications mentioned above. Here also may be included the various notices of meetings, reminders of appointments, and other communications of a like nature.

Standardized forms of records and reports.—Records and reports are communications embodying the results of operations carried on under delegated authority, made usually by a subordinate to his superior. Since the greatest value of reports is in the clearness with which they show not only what has been done during the period covered by the report, but also how the results compare with those shown by reports for earlier or later periods, standard forms of report should be used, so that the manager or other official receiving the report may read and compare it intelligently, with the least loss of time. If the manager is busy, he may care to examine carefully only certain features of

the report. He must be able to find the features he is interested in without delay, and must know that the respective headings in each successive report represent the same things. The office, as such, is concerned only with the clerical work involved in the preparation of the report, in its transmission to the person who is to receive it, and in the preservation of the report for future reference. The question of what the report shall contain is the concern of the management, not of the office. For contents of reports, see "Management."

Assemblage of data.—A very important function of the office is the accumulation and filing of data—the letters, records, and statistics serving as the "memory" of the organization, and also as a storehouse of information relevant to the various relations of the organization to its environment. Interpreting the function of the office consistently as being primarily a system of communication, the office files are the means of conveying to the various executives accurate reports of the methods used in and results obtained from past operations.

Filing.—Files are classified accumulations of written data preserved for future reference. The important feature of any filing system, of course, is not the ease with which papers may be filed, but the ease with which they may be found when wanted. Papers can be inserted in a file at leisure, and by clerks whose time is not especially valuable. When a paper is to be taken out of the file, however, the successful closing of a "deal" may be at stake, or in case of a delay a board of directors may be kept waiting. It is essential, then, that the filing system be a system in every sense of the word, and that

the filing clerks do their work with the care which its importance demands. There should be no delay, of course, in returning papers to the file after they have been taken out for reference, but while it is sometimes permissible to have data removed from the files by any authorized person, not necessarily a file clerk, only the file clerk should be permitted to replace them.

It is preferable that a central filing system be adopted, rather than one in which each department keeps its own files. There are many papers which may be needed for reference by more than one department, and the central file is accessible to all. Unity of arrangement can be effected by a single filing clerk with his assistants, and the filing system must be described in the office manual so that any one can find any papers desired in case of the absence of the filing clerk. Ease of filing itself should not be overlooked. Much labor may be saved by providing not only a convenient system, but ample space. Crowded files cause a waste of time entirely out of proportion to the value of the space which may be saved by crowding.

Perhaps for the reason that filing is to be classed with planning and other "unproductive" work, it has too often been put in the care of the lowest-priced and most inefficient employees. The employment department of one of the largest corporations in the country, for example, entrusted its files to a couple of half-grown office boys. The result was almost complete demoralization. The files contained some 70,000 applications, rate-cards and other records, which these boys had learned to handle by certain labor-saving devices invented by themselves.

It became necessary to employ a filing expert and staff to reorganize the work, whereupon it was put in charge of a young woman with six girl helpers. Even after that, the office boys, passing by, would say, derisively, "Two of us used to do all that work."

Classification before filing.—A scheme of classification must be adopted and adhered to. This, of course, is part of the filing system. In the filing of letters, for example, care should be taken that communications from different representatives of the same house are filed together under the letters or figures representing the house, and not separately under the names of the individuals. The data to be filed should be sorted before filing begins. As an example of the classification of correspondence, we may quote the following, taken from the office manual of the Westinghouse Electric and Manufacturing Company¹:

Our files are divided into the following classes:

- 1st. Orders received for material and correspondence pertaining thereto.
- 2nd. Letters bearing upon an important subject and for which we have constant use.
- 3rd. Correspondence pertaining to the solicitation of business.
- 4th. Correspondence relating to costs and prices.
- 5th. Correspondence relating to issue of publications.
- 6th. Books.
- 7th. Correspondence which, after having attention, is of small importance or unlikely to require further attention.

¹ W. H. Leffingwell, *Scientific Office Management*, A. W. Shaw and Company.

8th. Correspondence which, after having attention, is of no value and never referred to.

Flat and vertical filing.—Flat filing is rarely to be recommended, except for temporary or special purposes. Examples of flat filing are seen in the filing of bills and other papers on a spindle, or in the keeping of letters flat in the drawer of a desk. Vertical files are those in which the papers are held upright, with guides at intervals to support the papers and to indicate the index letters or numbers preceding or following.

Filing systems.—In a vertical file, data may be filed alphabetically, numerically, or geographically.

The alphabetical system is the simplest and is the best for small files. A card index is not required, but reference is made directly to the names on the folders in the file. As the names increase in number, however, it becomes more and more difficult to keep the proper alphabetical order. This type is not suited for expansion, as the guide letters must be increased in number as the file grows larger, or else too complex a system of guide letters must be used at first.

In the numerical filing system each article filed bears a number. It is necessary to maintain an alphabetical card-index in connection with the numerical file. Under this system, correspondence is filed in separate, numbered folders for each correspondent.

A combination of the alphabetic and numerical systems is that in which data are filed alphabetically, such items as belong together being placed in numbered folders in numerical sequence. If desired, a geographical or a subject basis of classification can be adopted, titles

being filed alphabetically within the geographical or subject divisions.

The geographical system is used, practically, only for filing correspondence with branch offices or sales districts. When it is desired to keep together all the correspondence pertaining to certain special subjects, folders of different colors may be used.

The Dewey Decimal System.—The Dewey Decimal Classification is widely known through its use in libraries. In various modified forms it is suitable for use in office filing-systems. Titles are indexed alphabetically and numbers assigned indicating the subject and subdivision under which the item is to be filed. Ten principal subjects may be designated by the numbers 000, 100, 200, and so on up to 900. Nine of the subject titles may be specific, covering separate branches of the subject, while one may be reserved for data of a general or miscellaneous nature, not properly to be included under the specific titles. The larger subdivisions under each title will be numbered by tens, as: 110, 120, 130, and so on up to 190. Lesser subdivisions will be numbered, for example: 111, 112, 113, and so on. As many subdivisions of these as may be desired may be made by using decimal series, as: 121.1; 121.2; or: 121.12, 121.21, and so on, to as fine a subclassification as is necessary.

It is advisable, if not necessary, that each series of numbers represent subdivisions co-ordinate in rank.

Disposing of obsolete data.—Since for convenience the files should be kept as small and simple as possible, it is customary to maintain three sets of files, one for "live" data, often referred to; one for "semi-live" data;

and a "storage" file. It is the practice to keep correspondence in the live file for one year; in the second file for another year; and in the storage file for five years, at the expiration of which period it is destroyed.

The "tickler" file.—The "tickler" file is used for the filing of data that require particular attention or that must be brought up for attention at some particular time. It is probable that the name "tickler" is a contraction or corruption of "particular." The paper requiring attention is placed in an ordinary correspondence folder and marked "Tickler File," with the date and the name of the person who must give it his attention upon that date. These folders are kept in chronological order and each day the file clerk takes out the folders for the day and sends them to the persons designated. This system is frequently used in making collections, as described in the chapter on "Credit"—cards being placed in the file, indicating the dates upon which accounts are due or upon which delinquents have agreed to pay.

The card index.—In connection with certain filing systems and for various other purposes card indexes must be kept. These may be in the form of cards in trays, or may be of the "visible" type, in which cards in series, each with its finding name written on the upper edge, are arranged so that each stands a little higher than the one preceding. Instead of being in trays, the cards may be hung on a display stand.

Business libraries.—Besides the filing of correspondence, records and other data pertaining more strictly to routine operations, many establishments maintain special libraries of business books for the facilitating of research

work and the educational advancement of their employees. In a library of this kind, there will be filed not only the scientific, technical and other books and magazines to which access is desired, but also publications such as trade journals and catalogues.

Standard catalogue sizes.—Catalogues will be filed, whether or not a "special library" is maintained. It is evident that if catalogues, especially, could be standardized as to their dimensions other than thickness, or number of pages, the problem of filing would be greatly simplified. It might not be necessary or even advantageous to adopt only one size as standard. There might be several standard types. *The Purchasing Agent* has been conducting a movement for the standardization of catalogues, and has received not a little encouragement.¹

It would seem that no one would dispute the advantages of catalogue standardization; the difficulty is in getting the policy adopted. Each house strives to get out

¹Through the efforts of *The Purchasing Agent*, a national convention of persons interested was held in May, 1918; at this convention three standard sizes were adopted: 6 x 9, 7½ x 10½, and 8 x 11.

The size 7½ x 10½, which is recommended for the use of purchasing agents, is a so-called "hypotenuse oblong." The hypotenuse oblong has the peculiarity of maintaining the same ratio of breadth to length however many times it may be folded or doubled. To make a size of sheet which is designated as an "hypotenuse oblong," all that is necessary is to construct a right-angled triangle of which each of the two sides is equal to the width of the sheet which is to be used. The third side of this right-angled triangle—the hypotenuse—will be the length of the sheet desired. A catalogue of the hypotenuse oblong type can be reproduced in smaller or larger sizes without altering its proportions and without the waste of paper which might otherwise be incurred in cutting, since the size of sheet used in the original edition will cut to half or quarter sizes without waste. For discussions of catalogue standardization, see articles in *The Purchasing Agent*, June and July, 1918, particularly "The Hypotenuse Oblong as Affecting a Universal Catalogue Size," by Fred Schulder, in the July issue.

a catalogue that is "distinctive," but on account of the difficulty of filing catalogues of many shapes and sizes, most are thrown away. It is probable that a standard catalogue in the file would be of more value to the publisher than a distinctive catalogue in the waste basket.

The assigning of office tasks.—In order that office tasks—of which those mentioned in the foregoing pages are fairly representative—may be assigned intelligently, with the greatest economy of effort, an adaptation of the principles of scientific management should be made. Scientific management, of course, is not something that can be purchased ready-made and installed like an adding machine or other office device. The application of scientific management methods involves, in the first place, a thoroughgoing standardization and classification of all office tasks. Such a standardization, obviously, cannot be made without an orderly arrangement of the duties of the various executives, out of which duties arise those of the office manager and his employees. When the duties of the executives are systematized and performed in a regular manner, it should be possible to organize the resultant office duties with a corresponding efficiency.

The principle of functionalized organization is a very simple one. Every organization is functionalized to some extent. The more complete the functionalization, the more closely the organization approaches the type demanded by scientific management.

The larger divisions of the work which must be done are easy to perceive. They form the main "departments." Scientific management, however, is not content with a separation of duties into several main departments, in

which duties may be so varied that each worker may have a number of unorganized and almost unrelated tasks to perform. The duties within each department must be studied and classified, and assembled into minor departments, until each task is analyzed into its basic parts, until each operation can be subdivided no further. The one best way of performing each separate operation is then determined, and like operations are grouped into tasks, each task, therefore, being composed of operations which certain workers or classes of workers, chosen for their natural or acquired fitness, are selected to perform. By constant practice in performing the same operations a degree of skill is attained which is impossible where the worker has a number of varied duties.

Scientific management, then, applied to office work, implies essentially a high degree of specialization in the division of labor. Too much specialization, however, may require the expenditure of more energy to keep the system in operation than can be conserved by the system, especially in view of the fact that office employees must frequently be replaced, and new workers trained in unfamiliar methods of working. The office manager must decide at what point further specialization would become unprofitable.

In some large offices, especially in cases where the first consideration is to get the work done not as cheaply as possible, but as quickly as possible (as in a mail-order business, where orders must be filled promptly), the workers are organized into groups or "teams," each group taking certain tasks and each member of the group taking certain subdivisions of the task, so that each task

is performed rapidly in a sequence of operations performed by the respective workers in the group. A disadvantage of such a system is that if a single member of the group or "team" is absent, the work is disorganized.

Whatever system of distribution of tasks may be adopted, the work should be carefully planned in advance, and the more important details given priority. When the tasks are studied and classified a chart of organization should be drawn up and a schedule of operation constructed and adhered to. The schedule of operation will include all regular duties, both routine and periodical. An individual schedule should be made up for each employee. Not all the work can be reduced to routine, but if the regular duties are well organized special duties can be more easily taken care of.

As noted above, an intelligent organization of the work of the office is possible only when the work of the executives has been systematized. No part of a business can be complete in itself.

Too much stress cannot be laid upon the fact that not only must methods be standardized, but also the amounts of work which each employee is to perform. It is safe to say that in the average office, where a number of clerks are employed, some will do twice or three times as much work as will others. Those whose efficiency is low may be handicapped by a lack of organization of their duties, or by lack of training, or by physical or mental unfitness for their tasks. In any case, the office manager should know how much work each employee accomplishes, and how this amount compares with the

amount which he should accomplish. Obviously, a system of work-measurement must be devised, with the alternative of unfairness to the employee, as well as of loss to the employer.

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CHAPTER XIII

WAGES

Definition of wages.—Wages, in the broadest sense, are the laborer's share of the products of industry—the laborer, for our purpose, being anyone who receives a stated remuneration in exchange for his services.

While we are accustomed to think of wages in terms of money, it is obvious that wages in reality consist not of money, but of the satisfactions which the money wage enables the recipient to obtain, together with such other satisfactions as may accrue to the recipient as a result of the circumstances or conditions of his employment. Agreeable surroundings, relative immunity from hazards to health or safety, permanence of employment, prospects of promotion, protection in case of misfortune—all these must be counted as part of the wage.

The products of industry.—The ultimate aim of industry is the production not of wealth but of human happiness. Since the creation of an abundance of economic goods, however, is the most practical means of insuring the maximum of human welfare or happiness, industry devotes itself immediately to the production of economic goods.

Distribution of the products of industry.—To those who have assisted in producing them, the products of industry are distributed directly in the form of interest, rent, wages, profits and taxes. These returns may be

regarded as: interest and rent, to the capitalist; wages, to the laborer; profits, to the enterpriser, "business man," or employer; and taxes, to the public. The public, of course, is made up of capitalists, employers and laborers—principally, however, of laborers. Although graduated taxes on income were instituted as revenue and not as regulation measures, it is to be presumed that they will be continued in some form as a permanent feature of the machinery of wealth-distribution, tending to equalize the returns to those engaged in industry in whatever capacity.

At this point we cannot consider the many economic problems involved in the distribution of wealth. It is necessary, however, that we bear in mind that wages do not stand by themselves, but are closely related to the various other forms in which the products of industry are distributed. While the ratio of distribution is affected somewhat by bargaining, the wage level depends primarily upon the abundance or scarcity of goods. It is so obvious as to be scarcely worth noting, that high money-wages do not necessarily mean high wages. The prices of goods and those of labor tend to rise and fall together, so that while the laborer may receive at various times, for the same amount of work, wages of \$1, \$2, or \$3, these are merely various forms of conveying to him the title to a certain proportion of industry's distributable goods—say $1/3$, $2/6$, or $3/9$. Our conception of the distribution of the products of industry as a whole will not be altogether inaccurate if we imagine the enterpriser, business man, administrator, or employer as custodian of the world's distributable goods, issuing them upon requisitions presented by the several claimants

—capital, labor and the public—the business man or employer himself being the residual claimant, and the amount of goods covered by each requisition being the result of bargaining between the several claimants, society acting as arbiter in cases where an agreement cannot be reached. The bargaining is in effect a valuation of the contributions to industry made by the respective claimants of the products of industry. Value is determined, of course, by desirability on the one hand, and scarcity on the other hand—that is, by demand and supply.

High productivity means high wages.—The problem of wages, then, is clearly one of two distinct phases—production and distribution. Failure to differentiate between these phases of the wage-problem has led to incalculable economic waste and to a corresponding depression of the level of wages. To put the matter briefly, the earning of wages is a question of production; the payment of wages, one of distribution. However unjust the distribution may seem to be, disagreements as to distribution must not interfere with production, for in high production lies the only hope of high wages as well as of high profits. If two men on their way to market with a load of perishable goods find themselves unable to agree beforehand as to the division of the proceeds, it is better for them to unite their efforts to place the goods upon the market, and to defer their quarrel until after the goods are sold—rather than to fail perhaps to get the goods to market at all. Various legal and other measures of redress are open to the injured party, if an amicable agreement can not be reached.

The limits of wages.—Assuming that goods are pro-

duced in quantities at least sufficient for the bare support of the human race, wages, at their lower level, are what the laborer must receive in order to subsist; at their higher level, they are what the employer can pay without sacrificing all of his profit. In emergencies, of course, the employer may sacrifice his profit and even a part of his accumulated capital, rather than let his enterprise lose its going-concern value. The laborer may accept, temporarily, something less than his cost of subsistence, this being preferable to nothing at all. Between these limits, bargaining takes place, and by this means the actual rate of wages is fixed. Obviously, it is to the interest of all concerned to keep these limits as far apart as possible. This is merely another way of saying that productivity should be maintained at its maximum. The human pack will not fight over the carcass of profit—at least, not with any great violence—so long as there remains enough for all. When only the bones are left, they will turn against each other.

Incidentally, this situation constitutes the great argument for scientific management and for labor-saving machinery in general. The increased productivity resulting from labor-saving methods widens the margin of safety between the upper and lower limits of wages. The question of whether or not improvements in the means of production will continue to outrun the increase in population brought about by the greater abundance of economic goods made possible by the improved means of production, is one which the future must answer. It is likely to be a vital question again, as it was in the days before power-machinery was invented and before

transportation made accessible new fields of production. For the present, we must regard maximum production as being the prime object of industry, regardless of its possible effect on future population and future wages—maximum production, so long as goods are so scarce that procuring the means of subsistence is a difficult matter for many of the human family.

What is a fair wage?—Theoretically, perhaps, a fair wage would be the money-equivalent of what the laborer has produced—what he has added to the total supply of goods. The production of goods, however, cannot be segregated into the outputs of labor and capital, respectively. It is a joint production. One without the other could produce nothing. Even if the production attributable to capital as a whole could be segregated from that attributable to labor as a whole, it would be impossible to determine even approximately the value of any laborer's individual or specific contribution. Different workers are found at successive stages of the process of production, and no one can tell which worker's services are the most valuable, measured in terms of output. The products themselves are scattered far and wide. Some are consumed within a relatively short time; others are stored for the future. Some classes of products are consumed directly; others are used in further production. The laborer must be paid in advance of the utilization of his product—some one must discount the value of his services and assume a certain risk. Obviously, a search for the wage which is fundamentally fair—based upon the laborer's contribution to industry—can be little more than an interesting intellectual pursuit, for the fair wage, as

such, does not exist. For fairness we must substitute expediency. A wage which gives relative contentment to the worker and which leaves the employer a reasonable profit—the wage and the profit being in each case sufficient to incite the worker and the employer to co-operate in carrying on a maximum production, may be found by a series of trials or experiments, and may be called, arbitrarily, a fair wage.

In the practical ascertainment of such a fair—that is, expedient—wage, a base or minimum wage is taken, representing the prevailing rate of wages at a given time for average workers under average conditions, and to this base wage is added an amount corresponding to the value of the performance of the individual laborer in its variation from average performance. The base wage is merely assumed to be fair; the additions to the base wage can be calculated, however, with scientific accuracy, with allowances for length or continuity of the laborer's service, for variations in the cost of living, and for other factors as well as the specific performance of the individual.¹

If after the payment of a "fair" wage to the laborers, ascertained in the manner described above, the employer is left with a profit "unreasonably" large—that is, larger than employers ordinarily secure—competition will set in more strongly, reducing the selling price of the product; or direct action may be taken by the public through taxation or price-fixing, to secure for the public, or in some cases for the wage-earner, the "unreasonable" portion of the employer's profit.

¹See the general wage equation of the Franklin Motors Company, p. 303.

For the capable worker, then, the expedient wage comes to be regarded as the fair wage. What, however, shall we regard as a fair wage for those who are not capable—a fair wage for the world's ineffectives? This question also is one which the future must answer.

Wage-policies of capital, labor and the public.—It is apparent, for the maintenance of maximum production, that there is need for the establishment of a common viewpoint from which wage and labor questions in general may be regarded by capital, labor and the public. For the purpose of the present discussion we may regard capital as comprising both capitalists and employers, since the latter are usually owners as well as users or borrowers of capital. The interests of each of these lie in the greatest production—about this there is no question.

Individual laborers and individual capitalists are not content, however, to share merely in a general benefit. They desire to obtain, each for himself, a peculiar personal advantage. Instead of confining their distribution disputes to the fields of distribution, they carry them over into the fields of production. Manipulation of production for the sake of forcing an abnormal distribution can result only in economic loss which eventually falls even upon those who have made a temporary gain.

Since those in control of production are in a strategic position with respect to the control of distribution, it is not surprising that control of production is one of the principal objectives likewise of capital and of labor. The means by which control is attempted are touched upon in the chapter on "Control of Labor." There the necessity of control from a single, impartial viewpoint is em-

phasized, as it is also in the chapter on "Management." Here we may consider, briefly, the policies of capital and labor, respectively, toward the wages question, and give also a brief résumé of the policy of the public, as evidenced by recent legislation.

Wage-policies of capital.—Capital undoubtedly regards the services of the laborer primarily as a commodity, to be purchased at the lowest price. The human viewpoint, however, is not altogether absent; the welfare of the laborer, as a human being, is to some extent taken into consideration. Since the wage-level in general can be but little affected by the efforts of individuals, attention is given chiefly to obtaining from each workman the greatest productivity. To this end, not only is a wage sufficient for the support of the workman readily agreed to, but bonuses or premiums are paid with a view to stimulating the workman to a more efficient performance, within the limits set by health, safety and continued physical endurance. It is to the interest of the employer to keep the base wage as low as possible, in order to leave a broader margin for use as incentive-wages.

Whether from motives of altruism or of business policy, the intelligent employer desires to see his men contented in their employment, but desires to retain the maximum of control over the rates of wages and over the conditions of employment in general. This control is threatened by the organization of trade-unions, which make powerful collective action possible to those who were practically helpless as individuals. Whereas the individual workman was formerly almost helpless in his dealings with the individual employer, the individual em-

ployer is now almost helpless in his dealings with the labor-union. It is but natural that individual employers, their control of industry menaced by the rise of the trade-unions, should have devised means of collective action, organizing themselves into "employers' associations," or "manufacturers' associations."

"Strikes are mainly successful in the early stages when employers have not learned the tactics of organization. After they have perfected these associations, after these associations have federated, and especially after employers have consolidated in great corporations or trusts, their capacity for united action exceeds that of organized labor. Their tactics are directed, not so much toward winning in strikes as toward preventing strikes and disintegrating unions. By wise promotions, by watchful detectives, by prompt discharge of agitators, by an all-round increase of wages when agitation is active on the outside, by a reduction only when the menace has passed or when work is slack, by shutting down a plant where unionism is taking root and throwing orders to other plants, by establishing the so-called 'open shop'—these and other masterful stratagems set up a problem quite different from what unionism has heretofore met." ¹

Summing up what we may call the wages policy of the employer, the employer desires to retain the fullest control of the business enterprise, in order that he may enjoy freedom of action, freedom to adjust the organization to meet prevailing conditions, and freedom to use the sums which he must pay out as wages in such a way as to secure the greatest returns in the form of

¹John R. Commons, *Labor and Administration*, p. 80.

profits. In brief, he regards wages as the price of the employee's most profitable services. In order that he may secure the most profitable services of the employee, he prefers to pay an individual wage, based upon the employee's individual performance. This forms the ground of his opposition to labor-unions, which exert themselves to secure not an individual-productivity wage, but the highest possible class-wage.

Wage-policies of the labor-unions.—The essential characteristic of the wage-policy of the labor-unions is the substitution of collective bargaining for individual bargaining.¹ The most unfortunate feature of the situation created by the carrying out of this policy is that, whether or not the wage demands of the unions are economically justifiable, their demands can be made effective only by interference with production, which, as we have seen, should be regarded as a problem distinct from that of distribution. Not only do the unions directly affected use the "strike" as a means of enforcing their demands, but the "sympathetic strike" is also employed, bringing external pressure to bear upon the employer with whom the workmen directly affected are negotiating.

So far as production is concerned, the interests of employer and employee are the same. So far as distribution is concerned, there are limits within which their interests are directly opposite.

We should be slow to condemn the use of the only weapon the labor-unions possess—the power to withhold their labor until their terms are met. At the same time,

¹For illustrations of union and non-union collective bargaining, see the end of this chapter.

it must be recognized that when men attach themselves to a business enterprise there may be certain obligations created which may not be disregarded at pleasure. The employer stakes his capital on the premise that the workmen will supply labor on reasonable terms. The prosperity of the State depends upon the carrying out of this tacit agreement. It would seem that the whole question is one of the interpretation of the term "reasonable," and that if employer and employee cannot agree between themselves the State must exercise its superior power and decide the matter. Here, however, another difficulty arises. The State, conceivably, may define the conditions under which labor *may* be employed, but we have not yet reached the point where the State can say that upon certain terms labor *must* be employed. The employer is still left with the right to withhold his capital until such time as he may feel disposed to employ labor upon the terms defined. It is true, of course, that capital cannot afford to remain idle, but still less can the laborer afford to remain idle—labor is a commodity the most perishable of all.

It must be remembered, however, that while the public may be disposed in general to side with labor as against capital, the labor-unions do not represent labor as a whole, but only the most fortunate classes of laborers. The aggregate membership of the unions at present (1922) is something over two millions—a small proportion, it would seem, of all the workers of the country. The labor-unions, moreover, are fully as bitter in their attitude toward those below them as toward those above them, although it is possible that concessions obtained

by the unions for themselves tend to improve the condition of non-union laborers as well.

For many reasons, legislation on labor matters is of little or no avail, and is not desired even by the labor-unions. Legislation, to be effective, must provide alternatives and penalties in every case—if it provides a minimum wage, it must guarantee continuity of employment, or the provision is meaningless. If legislation compels an employer to pay a given wage, it must compel the laborer to deliver a certain amount of work—a hopeless undertaking. An enlightened public opinion may accomplish, however, what specific legislation cannot accomplish.

Wage and labor policies of the public.—The public has realized that labor disputes are wasteful and that most of the burden of this waste falls directly on it. Various expedients are now being tried by the Government to eliminate this waste and it is likely that these expedients, as soon as they can be justified by ample testing, will be adopted more extensively than they now are. The Government's aim is to forestall dispute by arbitration, or where disputes are precipitated, to furnish the machinery of an impartial tribunal, the decisions of which will be accepted by both sides to the controversy. The early experience of the Railroad Labor Board shows how difficult the carrying out of such a program is likely to be. On the other hand, some very definite accomplishments of the Court of Industrial Relations of Kansas show what may be hoped for. During the first ten months of the existence of the Court, which was established in February, 1920, on the industrial side 28 cases were actually filed

during the period. "Of these, 25 were filed by labor and 1 by capital, while 2 were investigations initiated by the court. Of the 25 cases filed by labor, 20 received formal attention and decision. In 13 cases a wage increase was granted, in 2 only working conditions were involved, in 3 wages were found to be fair so that no increase was allowed, while in 1 the complaint of the employees was satisfied by the action of the employers, the court simply approving the settlement made. The remaining case was merely referee action on a collective agreement."¹ The court also carries on the work of the public utilities commission.

The extent to which the national and state governments are assisting in the work of solving labor problems is reflected in the program and resolutions of the convention of the Association of Governmental Labor Officials of the United States and Canada.² Discussions covered the use of labor statistics, vocational education, child labor, women in industry, and methods of factory inspection. The following are some of the resolutions that were adopted:

"Resolved, That this association indorse the minimum standards for children in industry adopted by the Child Welfare Conference called by the Children's Bureau of the United States Department of Labor in 1919.

"Resolved, That in view of the importance of safeguarding the health of working children through adequate provision for physical examination of minors entering in-

¹ *Monthly Labor Review*, June, 1921, p. 133.

² Convention was held May 2 to 5, 1921, at the Grunewald Hotel in New Orleans.

dustry and at work, this association expresses its approval of the principles embodied in recommendations of the committee appointed by the United States Children's Bureau to formulate standards of health for working children, and recommends the general adoption of these standards in the various States and Provinces.

"Resolved, That the convention recommend that the uniform method of tabulation of accident statistics now in use in several States be employed by the different States and Provinces, and that notice of this recommendation be sent to the boards and commissions that deal with industrial accidents.

"Resolved, That the association recommend that more adequate opportunities for vocational training in trades or industry be offered to women and girls, and that notice of this recommendation be sent to the various State and provincial boards of education.

"Resolved, That the association recommend that State labor departments take a more active part in shaping the policy of labor legislation in their respective States." ¹

Minimum wage legislation.—Minimum wage legislation is not designed, in its present state of development, to influence the prevailing rates of ordinary wages, but only to protect society against the evil effects of the payment of less than a living wage to women and minors. The right of the State to enact protective legislation is based on the police power of the State. In addition to minimum wage laws affecting the employment of women and minors, this type of legislation includes the enactment of

¹ *Monthly Labor Review*, June, 1921, p. 6.

laws providing for workmen's compensation for all industrial accidents; "Sunday Closing" Laws; and laws specifying the maximum length of the working day.

Prior to the year 1918 practically all the States had passed workmen's compensation acts, and thirteen States had enacted laws providing a minimum standard of wages for women and minors. The minimum wage laws of three States—Oregon, Arkansas and Minnesota—had been upheld by their supreme courts and the decision of the Supreme Court of Oregon, holding the Oregon law constitutional, had been left unchanged by the equal division of the Supreme Court of the United States, April 9, 1917, Mr. Justice Brandeis not voting, as he had represented the State of Oregon in upholding this law prior to his elevation to the Bench.

State minimum wage laws, as noted above, are based on the right of the State, by the exercise of its police power, "to modify or restrict the liberty of contract in behalf of the general welfare as conceived by the legislature." The Supreme Court held that "we do not look to the Constitution to find the legislative power of a State. The State legislature possesses all legislative power not withheld or forbidden by the terms of the State or Federal constitution."

Two methods of fixing the minimum wage are to be observed in the several laws referred to; one is the fixing of a minimum rate by the legislature—the other, a more practicable method, is the creation by the legislature of a commission empowered to fix and adjust a minimum rate from time to time, to meet changing conditions. The power of a commission to fix minimum rates was ques-

tioned as being a delegation of legislative authority, which, of course, would be unconstitutional. As to this contention, however, the court held, in the Minnesota Case (*Williams vs. Evans*, 165 N. W., 495), "That there was no such delegation, but only an authorization to determine such facts as the law itself requires to be decided before it shall take effect, saying, 'The true distinction is between the delegation of power to make the law, which necessarily involves a discretion as to what it shall be, and conferring authority or discretion as to its execution, to be exercised under and in pursuance of the law. The first cannot be done; to the latter no valid objection can be made.'"¹

Publicity as a corrective of labor troubles.—Whatever means eventually may be devised for the solution of the labor problem—for obtaining a fair distribution along with a maximum production—the first requirement is an exhaustive compilation of all relevant facts. The needs of the market must be ascertained, the needs of the laborer, the needs of the employer, the costs of production, and the amount, in the case of each business concern, of the so-called "net profits." When all such information is secured and classified, and given to the public, it is to be looked for with confidence that an enlightened public opinion will compel an approximately fair or, at any rate, satisfactory settlement of every point in dispute.

- It is not very long since the idea that "a public office is a public trust" was hailed as marking a new era in politics. The public office was no longer to be regarded

¹*Monthly Review of the Bureau of Labor Statistics*, March, 1918, p. 144.

as an instrument for the securing of private gain, but of service to the public. We have now reached the point where it can be said that a public business is a public trust; that the holding of property implies not only the responsibility of society in the protection of the holder, but also the accountability of the holder to society. The doctrine of the divine right of the property-holder seems in a fair way to follow that of the divine rights of kings—not that there appears at present any workable scheme for the abolition of private property rights, even if that were desirable, but that in our modern world-democracy no privilege is to be granted except in consideration of service to be received by the public. If the property-holder is to be held accountable to the public, his books must be opened to the public. The net profits of every business enterprise, as revealed by the tax returns, should be published, or at least made readily ascertainable. If public opinion is to be the deciding power in wage controversies, no relevant facts must be withheld.

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CHAPTER XIV

WAGE SYSTEMS

Wages from the employer's point of view.—It has been necessary to attempt in the foregoing chapter a consideration of wages from several points of view. In this chapter, however, we must regard wages primarily from the employer's point of view—that wages are what must be paid in order to secure the employee's most profitable services.

Wages analyzed.—The payments made to a workman to secure his most profitable services will be seen to consist of the following elements:

1. A sum sufficient to secure the workman's time—which will, in other words, induce him to give up his personal freedom.

2. An additional amount which will make him willing also to expend his physical energy.

3. An extra amount which will secure his careful thought as well as his mere physical exertion.

4. An amount in addition to the foregoing which will secure the workman's good-will, so that he will bring to his task not only diligence and intelligence, but also a certain *élan*, in the spirit of which he will feel himself to be not merely an employee but a part of the business itself.

When the workman has given these he can give no more, and accordingly receives no further increase in

wages for doing the same kind of work. There remains to him, however, the prospect of promotion.

Under certain conditions and with respect to certain kinds of work the employer may not need to pay for all these degrees of excellence in a workman. He may be able to dispense with the *élan*, which is far less valuable, for example, in the bookkeeping department than in the sales department. With respect to certain other kinds of work, good-will, and even intelligence and skill, may be classed with the non-essentials. It may be cheaper to secure a given productivity by employing a lower grade of labor and resorting somewhat to "driving" methods. The watchman, for example, who is perhaps the lowest-paid laborer, contributes little more than his time.

The value of the foregoing analysis is to make clear the fact that wages, from the standpoint of business, are a means (1) of purchasing the required amounts of time, strength, skill, intelligence and good-will which may be required for the task in hand, and (2) of injecting a stimulus into the organization at points where it tends to lag, where extra movement is required. It follows that wages cannot be adjusted or apportioned economically to the various requirements unless the requirements are known; hence the importance in their relation to wages, of such studies of the work to be done as are possible under scientific management. Time and motion study, standardization, and other allied features of scientific management, enable the employer to purchase exactly the quantity and quality of services which are required for the doing of a given task. It may be said also that from the standpoint of the workman these same methods

of scientific management provide him with the means of finding the task to which he is suited, and also with the means of advancement as he becomes competent to fill higher positions.

As business methods are perfected, guesswork is done away with and accurate knowledge takes its place. For example, when purchases are made, the goods purchased must conform to the specifications, which specifications are based on a careful study of the requirements. So it is with the employment of labor, for while business may not look upon the workman himself as a commodity, it is undoubtedly true that his work is and must be regarded as a commodity.¹ Any means by which this commodity is measured and paid for is known as a wage-system.

Three kinds of wages.—The various wage systems which business has evolved may be grouped under one or the other of the following heads:

1. Time-wages.
2. Service wages, or "piece-rates."
3. Rate-of-service wages or "efficiency wages."

The basis of the first is the time the workman spends; of the second, the amount of work he does; of the third, the speed with which he performs a given amount of work.

The third class—rate-of-service wages—is the most satisfactory, in principle, but it must not be supposed that

¹ Without contending, necessarily, that labor is a commodity it is safe to assert that labor is regarded as if it were a commodity. The Clayton Act states specifically that labor is not a commodity. This clause was inserted, it is said, by Senator Cummins, who feared that the courts might construe labor to be a commodity and restrain combinations of labor, which was not the intention of the framers of the bill, their purpose being to prevent combinations in restraint of trade, or commerce.

it is practicable for the average business to adopt one class or another to the exclusion of the other classes. Even in the best-managed establishments all three classes will be found.

A very brief outline of the essential characteristics of the three types may be given here, before they are taken up in more detail.

Time-wages are based on the assumption that, on the average, men are much alike, and that if a man's time can be secured his nature will manifest itself in a performance conforming, within rather wide limits, to the standards of his class.

Service-wages, or piece-rates, are based upon the assumption that a specified amount is paid for a specified service, the rate being designed to approximate the time-rate for a similar service, with a lessening of the loss due to "soldiering," and a general relief from uncertainty.

The rate-of-service plan for the payment of wages, however, is the result of the recognition of what we have come to regard as the scientific principles which may be applied to business methods. To reduce the time in which a job is done is to increase the return upon the capital invested; to maintain a schedule makes team-work possible and greatly expands the possibilities of the working unit—"unit" being taken here to mean the assemblage of men and machines devoted to a given task. Some of the benefits that follow the synchronizing of the working force and the reduction of the time required for performing a task are seen to be:

1. Saving in overhead expense

- (a) Machine time (interest and depreciation)
 - (b) Machine operating expense (power, lubricants, engineer)
 - (c) Proportion of interest and depreciation on entire plant
 - (d) Supervision and overhead management
2. Profits gained
- (a) From increased production of individual workman
 - (b) From increased production as a whole, due to maintaining of schedules, as well as from strengthening of the *esprit de corps*.

Time wages.—The system which we call the time-wage system includes all time-rates—hour, day, week, or month.

Certain advantages of the time-wage are obvious. The keeping of accounts is a very simple matter; the quality of the work is not so likely to suffer as where the worker's wages depend upon the amount of work he does; there is perhaps an advantage, from the social viewpoint, in the equalizing of conditions so that men of a certain class may receive approximately the same rate of pay, even if by reason of unequal ability, caused in part by the injustices of our social system, or by other things for which the individual cannot be held responsible, the output of the individuals in the class is unequal; again, undoubtedly the hiring of men on a time basis, especially where the time is long, tends to stabilize labor conditions.

The disadvantages of the system are equally obvious. While there is a limited benefit derived from the equalization of wages, it is not fundamentally correct, from the

standpoint of business, to permit reward except in proportion to performance. The workman is tempted to do as little as possible without running too great a risk of discharge. As a negro said in expostulating with a fellow workman for setting too fast a pace, "What is the use of rushing *through* work just to get *to* work?" There is no continuous and immediate incentive operating to impel the workers to improve their methods and thereby to earn a higher wage; and if wages are not used in their function of stimulating production, they have lost a considerable portion of their value. Again, under the time-wage system, there is no regular means of measuring work so that the employer can, with little extra expense, ascertain the times which make up his labor cost. A further consideration is that while the foreman over day-laborers may desire to have a good showing made by his men, as a group, he is inclined to resent any noticeable superiority in an individual; he may think the man is "after his job," and may even find a pretext upon which to discharge him. In any case, the ambitious worker is at a disadvantage, because there is no way provided whereby his work may come to the attention of the management through written records. It may also be taken for granted that so long as the time-rate persists, so long will the labor-unions be compelled to make war against capital, since the time-wage results from bargaining and not from a scientific study of conditions.

Service-wages.—Service-wages, or piece-rates, are designed to protect the employer against "soldiering" on the part of the workmen, and also to lessen the cost of supervision. Under this system, moreover, it is some-

times possible to get work done more cheaply, since certain classes of work can be done at irregular times and places, even at the homes of the workers, who are thus enabled to earn a regular wage elsewhere and a piece-wage at home in their "spare time." These latter considerations, however, in most businesses, are merely incidental, the main purpose of the piece-rate being to enable the employer to purchase a specific service at a specified price.

The base upon which the service-wage rests is nominally the prevailing time-wage received by workers in a similar occupation. Given the average amount of work done by the day at a certain wage, the piece-rate is fixed so that a somewhat similar amount of effort on the part of workers of the same ability will be rewarded by approximately the same wage.

There is a temptation, of course, for the employer to fix the piece-rates on a basis of the time taken by the best workmen. In this case, if a good man does his best, the average worker might not be able to earn a living wage. The result is that when records are being made at the time when a job is "priced," the workers take more time than is required, and the employer, when he discovers the deception, can scarcely be blamed for attempting to cut the rates.

It is easy to visualize the evils that naturally follow the establishing of wage payments upon such a basis. Tempted by the immediate prospect of more pay for additional exertion, the workers will "speed up" until they turn out much more work than the time-wage workers, probably to the detriment of their health or to

the sacrifice of their customary recreations. The employer feels aggrieved. He sees the workers earning not so much per piece, but so much per day. "Five dollars a day," he may exclaim, "that is more than I make myself!" Thereupon he cuts the rate to a "reasonable" amount. If the workers accept the new rate they must work harder than they did when they were receiving a time-wage, in order to earn the same amount of money.

In view of the manifest injustice of such a situation, it is certain that retaliation in some form on the part of the employees may be expected. One form which this retaliation is sure to take is the doing of slovenly work wherever there is a chance of its not being discovered by the inspector. Machinery and equipment are likely to be carelessly used, if not intentionally abused. Schemes will be evolved for "beating the management." Perhaps by common consent the workers will limit their production to a point far below that of their normal capacity; hopeless of obtaining a consistent high money-wage they will supplement their money-wage with as much ease or personal comfort as they can obtain, at the expense of their employer, who in order to retain his employees is forced to pay a rate per piece considerably higher than would be necessary if the employees were able to exert themselves without incurring the danger of having the rates cut again.

Another source of disturbance is that rates often vary in different establishments in the same community, or even in different departments of the same establishment.

It is not intended that the conditions pictured above shall be taken as usual or typical in a business where serv-

ice-wages are paid. Although the danger of their occurrence is nearly always present, such difficulties may not materialize in a well-ordered business, where the spirit of the "square deal" prevails both in the management and among the men. In such a business, the payment of service-wages, in cases where rate-of-service wages could be substituted, does imply, however, a failure to recognize the facts that service consists not merely in delivering a certain total amount of performance, but in delivering it within a certain time; and that all the elements of service should be standardized—the time element as well as the quantity and quality elements. The simplest illustration will show that this is true. The locomotive engineer is paid to run his engine and its train of cars not only over the number of miles of track of which his "division" consists, but also to do this in a specified time. He cannot come in an hour late and say "Here are your engine and cars." He has disarranged the schedule, kept other trains waiting and done more injury to the system than the value of his wages could offset. So in a shop, with its machines and processes co-ordinated by the planning department and run on a schedule, the time element in service is often as important as the quantity element.

If a business were completely standardized and if the work were done always in standard time, there would be only one system of wage-payments, by whatever name the system might be called. If the schedule were maintained, what would it matter whether the engineer got \$150 a month and made 30 trips, or made 30 trips a month, at \$5 each?

The sliding scale.—The sliding scale is a piece or

"service" wage (used principally in the iron and steel industries) designed to adjust itself automatically to varying conditions of business prosperity, the selling price of the product being taken as the index of prosperity during the period in question.

A base or minimum rate for boiling a ton of pig iron, for example, is agreed upon, to apply when bar iron is selling at a given price, or less, per pound; if the price falls below the base price the wage remains the same; if the price rises, however, the wage is increased sufficiently to give the laborer a percentage of increase in wages amounting to about one-half the percentage of increase in price of the product.

The scale is revised annually, and at intervals—usually of two months—the management issues to the representatives of the workmen a sworn statement of the prices obtained for the product during the preceding two months, from which prices are computed the amounts the workmen have earned above the minimum, or base, rate.

The sliding-scale system has some advantages, among them being its stabilizing effect upon the relations between the workmen and their employers; some of the uncertainty as to future wages, from the workman's point of view, and as to labor cost, from the employer's point of view, is eliminated, and a partial profit-sharing feature is introduced. It is easily seen, however, that such a system would be applicable only in a very narrow field, where conditions generally are somewhat standardized, and where the labor cost is the largest part of the total production cost which is liable to fluctuation. Where the increase over the base rate is proportionate only to the

selling price and not also to the production cost, a rise in prices of raw materials or other supplies might more than offset the benefit of an increase in selling price, and work an injustice to the employer—assuming that the base rate had been established with justice to each of the parties to the contract.

Rate-of-service wages.—The several wage-systems which we shall consider under the classification “rate-of-service wages” recognizes to a greater or less degree the time element as well as the quantity and quality elements, and their development is to be taken as part of the movement toward standardization. The important wage-systems which include rate of service as an element in the determining of the total wage are :

1. The Halsey system.
2. The Rowan system (British).
3. The Taylor differential piece-rate.
4. The Gantt “task and bonus” system.
5. The Emerson “efficiency” system.
6. The Ford system.

In each of these “rate-of-service” systems, increased performance is rewarded by the giving of a bonus. In the Halsey and Rowan systems this bonus is not standardized; the more scientific systems of Taylor, Gantt, and Emerson, however, are characterized, as might have been expected, by a standardized bonus. The Ford system, while providing the same rate of pay to all workers in a class, is in reality a rate-of-service wage, because working methods are so standardized that the output of the workman is practically determined for him by the management; if he does not maintain the schedule he is trans-

ferred to a position which he is able to fill, or as a last resort, is discharged.

The Halsey System.¹—The Halsey system of wage payment is a gain-sharing plan.² It is to be distinguished from the “scientific management” plans in that there is no preliminary time and motion study employed in determining the so-called standard time for the doing of any work. The best time made by the average workman is taken as a basis, this time being ascertained from the records. A time-rate is paid for the maintaining of this average time, with an increase for piece-work finished in less than the standard time, the workman getting credit, however, for only half or a third of the time he saves.

This system has been widely adopted and has in many cases been productive of excellent results. The reason for its success has apparently been the ease with which it can be installed without interfering with established methods of work. In this respect it stands in contrast to the superior and more scientific systems which can be installed only after a thorough overhauling of the whole establishment—an overhauling that frequently arouses the antagonism of the men.

Since the time standards of the Halsey system are not ascertained by means of a careful study of methods, the workman is often able to reduce the average time to a

¹ The Towne system, which is not included in the list above, is quite similar in principle to the Halsey system, the chief difference being that the Towne system rewards group efficiency, whereas the Halsey system rewards individual efficiency.

² Gain-sharing, which is not to be confused with profit-sharing, means adding to the workman's wages a part of the saving due to an increase in the speed of his work.

startling extent, whereupon there is a temptation for the management to cut the time to a more reasonable one, which again brings up one of the fundamental weaknesses of the old piece-rate system, the fear on the part of the workman that if he exerts himself to earn more, the rate will be cut so that he will thereafter be compelled to work harder in order to earn only as much as he was earning before.

It has been recognized, therefore, in all the modern systems, that there must be no cutting of a rate once set, unless the reduction is clearly justified by the introduction of improved machinery or by a marked change in industrial conditions generally.

Under the Halsey plan there is a chance for the men to "beat the management" when a new piece of work comes into the shop and a standard time has to be set for it. The men will "soldier" on the job—that is, purposely take longer to do it than is necessary. The time being set from the low records they have made, they will be able afterward to do the same work in perhaps half the time and earn a large premium.

The Rowan plan.—The Rowan (a British) system is similar in effect to the Halsey plan, but differs in the way in which the premium for better performance is computed; also in the relative increase of the premium for extra performance. In the Rowan system, the guaranteed time-rate, as in the Halsey system, is based on past average performance. Instead, however, of returning to the workman a premium amounting to the regular rate of pay for a percentage of the time saved, usually a half or a third, the Rowan plan returns a percentage of the

standard time-rate for the time used; the amount the workman receives as a premium is found by ascertaining the percentage of time saved and letting the bonus correspond to this percentage of the time actually used. Thus if a workman is employed at a standard day-rate of \$2.70 for nine hours, or thirty cents an hour, and does a six-hour standard job in four hours, he gets, first, the regular pay for four hours at 30 cents an hour, or \$1.20. Having saved two hours out of the six, or 33 $\frac{1}{3}$ per cent, his bonus amounts to a third of the regular pay for the time used, or 40 cents, making a total of \$1.60 for the four hours. A more simple statement is that under the Rowan plan the workman gets a bonus of 10 per cent of his base wage for each 10 per cent by which he reduces the time taken for the job, as compared with the time set as the standard. Under the Halsey plan, having saved two hours, worth 60 cents, his bonus would have been either one-half or one-third of this amount.

It will be observed that neither in the Halsey plan nor in the Rowan plan is it possible for the workman to earn a wage which could be considered excessive if the time or base rate has been figured reasonably. In the Halsey plan, each saving for the workman means an equal or a greater saving for the employer. In the Rowan plan, as the percentage increases, the base rate decreases, so that in no case is it possible for the workman to earn more than double the time-rate; even to earn twice the time-rate is possible only theoretically, for to do so would mean a saving of 100 per cent in the time. The premium actually decreases after a certain percentage of saving is effected, so that there is little if any incentive to the most

efficient performance. The Halsey and the Rowan systems, then, have two fundamental defects: 1. The base rate is not determined by careful methods, 2. The rate of reward decreases as performance increases.

The Taylor differential piece-rate.—The Taylor differential piece-rate is not to be looked upon as a wage-system complete in itself, but as one to be used only in connection with the policies and methods of scientific management, as developed by Mr. Taylor and his associates.¹

Under the older wage-systems, it is evident that there is a constant jealousy between the employer and the employees over what Mr. Taylor calls the division of the "surplus."² This surplus is the amount of the selling price less production costs, and the division of it has been the source of almost all the trouble between capital and labor. Mr. Taylor's hope was to make this surplus so large that there would be enough for each. In order to produce or create such an ample surplus, he says, it is necessary for the most economical methods of production to be installed, which methods can be ascertained only by scientific time and motion study. There must be a selection and subsequent training of the right man for each task, and the co-operation of the workmen with the management, in order to make production as high as possible. It is apparent that Mr. Taylor either regarded as hopeless or else regarded as unimportant the very complicated problem of determining a ratio of distribution that would

¹ "A Piece-Rate System," *Trans. of Amer. Soc. of Mech. Eng.*, Vol. 16, p. 856.

² *Hearings Before Special Committee of the House of Representatives to Investigate the Taylor and Other Systems of Shop Management*, p. 1388.

conform to justice in the abstract, but fixed the rate at the point where the wage would be sufficient to stimulate the men to the degree of efficiency in production which would be most profitable to the employer without injury to the health of the workman.

The differential piece-rate system devised by Mr. Taylor eliminates the danger that the men will try to "beat the management" as they may do under the Halsey system. It is impossible for them to do so, because the rates have been set scientifically and not by guesswork. Two rates are paid per piece—one rate applying to fast work, performed according to the "schedule" or standard, and the other to slow or imperfect work. The two rates are so far apart that the inefficient workman receives no more than ordinary time-wages, and may receive less, while the successful workman receives much more than ordinary wages. A feature of great importance in connection with the system invented by Mr. Taylor is that the "elementary unit times" are on file and are used in constructing the time allotted for new work, so that an accurate estimate of labor cost can be made in advance. The rate-fixing department was regarded by Mr. Taylor as being of much greater importance than the differential rate itself.

A most interesting example of the Taylor differential piece-rate system, as developed and applied by Mr. George D. Babcock, Manager of the Franklin Motors Company, is given herewith, taken from Mr. Babcock's book *The Taylor System in Franklin Management*.¹ The fundamental base-rates, it is explained by Mr. Babcock, have

¹ Published by *The Engineering Magazine*, 1918.

been temporarily taken as the prevailing wage rates for men who worked by the hour without task in the year 1905. No attempt has been made as yet to determine the correct wage-rate for the workers or in any way to establish fundamental values for their efforts, but this fact has been established: if the base wage-rates of 1905 were then equitable, these base wage-rates are now equitable. Here follows the general equation for the basic rate, where the premium method of payment is used:

$$r = \left[\left(\frac{K[B(1+i+m+ny)+R]}{V(1.3E-.3e)} \frac{(1+.2e)}{(1+.35Pa)+S} \right) (Pt+Pd(1+.5e)) \right] C$$

and the equation for the determination of labor and indirect cost (not including materials) is:

$$X = (r(1+e)+R)t.$$

The terms used above, which are common in both of the following equations, are defined as follows:

- r=Base hourly rate man is to receive
- K=A constant, when V is 100 per cent, to bring worker under standard conditions to standard rate
- B=Fundamental base-rate, temporarily that of 1905
- i=Percentage of increase in living since 1905, taken on the 15th of January, April, July and October of each year
- m=Percentage allowed for each extra process known or learned
- n=Percentage allowed for years of connected service
- y=Years of such service
- R=Fixed charges rate per hour which man has chance to modify
- e=Percentage of premium earned on time allowance
- V=100, which is the standard accomplishment per cent
- E=Standard premium task time set
- Pa=Percentage of time absent or late
- S=Value of spoiled work per producing hours worked
- Pt=Percentage of time under task
- Pd=Percentage of time spent on non-task or straight time work
- C=Co-operation and conduct
- X=Labor and fixed charge cost
- t=Time taken to do work

These terms are treated at length in the book from which they are taken; in these pages we can note the explanation of only a few of the more important of them.

With respect to "R," in the equation, the fixed charges do not mean the conventional "overhead," but only such fixed charges as the workman can influence. Space, heat, light, sanitation, machine interest and depreciation charges, and service provided for the worker and his machine, will vary from a fraction of a dollar to several dollars per hour; the hourly fixed-charge of a small drill is insignificant compared to that of a large stamping press, or milling machine, or planer. The rate is set by the management, which assumes full responsibility for its correctness; if the workman is able to lessen the time of the operation, he receives all the saving; conversely, if he lengthens the time of the operation, an adjustment in his rate is made in order to offset the loss which he thereby causes to the management.

In the cases of "Pa," the schedule being closely fitted and the equipment being adjusted to exact needs, absence of the worker causes a corresponding overtime effort either by the same worker or a substitute, and since overtime is paid at a one-third higher rate, it is thought only fair that any conduct of the worker which will give rise to overtime should be adjusted by his rating.

With respect to "S," only such spoilage as the workman is responsible for is considered in the adjustment of the rating. The problem of correction for work spoiled is a very difficult one. Although the workman may spoil not only valuable material, but also all labor and fixed charges previously accumulated on the part, he cannot be held accountable except for the moneys paid to him and for the fixed charges on his own operation, there being no justice in charging him with the full material value

or previous effort applied, for which he is not accountable.

Mr. Babcock in commenting upon the results of the rating system here described, says: "This may all seem to be a very complex solution of the problem, but it seems to be the least complicated expression which will solve the problem in any satisfactory way and allow for the perpetuation of standard rules without personal differences interfering in each new rating. A re-rating occurs four times a year. We feel that the plan has been vigorously tested. Not only have we had no resignations on this account, but we have also attracted a considerable number of excellent men to our force."¹

The Gantt "task and bonus system."—The task and bonus system was originated by Mr. H. L. Gantt in 1901, while he was associated with Mr. Taylor at the Bethlehem Steel Company's plant. It was at first a bonus of 50 cents a day paid to the workman who completed his tasks within the time specified on the instruction card, and was designed to offer an inducement pending the time when sufficient data could be accumulated for the establishing of the permanent and inflexible Taylor differential piece-rates. The system was developed by Mr. Gantt until it assumed the form of a time-rate with a substantial bonus for completing the task in the standard time, or in less than the standard time. This bonus is a time-rate for an agreed percentage of the standard time, ranging from 20 to 50 per cent. It is not unlike the Halsey system, except in that the workman must reach the standard before he receives any bonus, and in that

¹*Taylor System in Franklin Management*, p. 105.

the standard time is calculated scientifically. A bonus is also paid to bosses or foremen, based on the performance of the men under them.

The Emerson "efficiency" system.—The Emerson "efficiency" system is a compromise between ordinary methods and the scientific management methods. A task is set, partly from workmen's former records and partly from careful estimates of the proper time-allowance, and this time is called "standard." The workman receives a time-rate, as in the Halsey and Gantt systems, and also a bonus, beginning when he has reached a point of efficiency of 67 per cent of the standard. The bonus is, however, very small at this point, and increases slowly until the performance is within 90 per cent of the standard, at which time it amounts to a 10 per cent increase in total wages. At 100 per cent efficiency the bonus is 20 per cent, while efficiency of more than 100 per cent, which is quite possible, on account of the moderate standard requirements, entitles the workman to the regular rate for all the time he saves, and the 20 per cent bonus as well. The Emerson bonus is not paid for each task by itself, as is the Gantt bonus, but is averaged for certain periods, usually of a month at a time. It is therefore impossible for the workman to exert himself to earn a bonus on one job and "loaf" on the next, without sacrificing a part of what he has gained. A bonus for continued efficiency is also given by the Gantt plan.

The Ford system.—Like the Ford car, the Ford wage system is of a startling simplicity. Essentially, it consists merely of a 50 per cent increase above the prevailing time-rates, paid equally to all workers of each class. The

ultimate penalty for inefficiency is not lower wages, but dismissal. The result is that the Ford Company practically has its choice of the most desirable workers in the entire country. By means of a judicious selection from the mass of applicants, men are secured who are able and willing to fit themselves into the Ford organization; their ability is established and unquestionable; all that remains to make the plan complete is the maintaining of the essential scientifically arranged working-methods, so that the skill and willingness of these superior workmen can be utilized to the fullest. It is well known that the Ford shops represent the utmost in scientific management, with all that scientific management implies. The success of the Ford wage-system, for the Ford Company, was inevitable.

It is evident, however, that a system which depends for its success primarily upon the attracting of the better grades of workmen can be successful only for a limited number of establishments. When the best workmen are collected under the lure of high wages, the places which they have left must suffer. If these businesses in turn should attempt to recall their workmen by offering a similar wage, the "system" would turn into a chaos of uncertainty and confusion. High wages would no longer be an incentive to full performance; the penalty of discharge would lose its effectiveness. One of the essential features of the sound wage-system, as insisted upon by the far-seeing founder of scientific wage-systems, F. W. Taylor, would be lost—the rewarding of efficiency and the penalizing of inefficiency.

Essentials of a sound wage-system.—In order that

a wage-system may be of general application and as free as possible from weaknesses, or whatever might make for disintegration of the system, it may be taken as established that the following principles or practices must be incorporated in it:

1. The task upon which payment is based must be the result of careful study—preferably, scientific study, of laboratory accuracy. However intelligent and however conscientious a workman may be, it is impossible for him to develop the best methods of working. Instinct will not avail; reason and judgment cannot even approximate perfection. To construct even the simplest scientific task, it is necessary to use laboratory equipment and methods, with the aid, when required, of engineers, or physicians, or psychologists.

• 2. Employees must be fitted to their respective tasks, which tasks, of course, have been constructed with a view to their performance by the best-fitted available employees. Means must be provided for the instruction of the workman in the performance of the task.

3. Employees must have working conditions and wages with which they will be contented. A base rate, sufficient to maintain the employees in reasonable comfort, must be guaranteed, regardless of the bonus which may be made by extra exertion. As a starting-point, in the fixing of rates for the various classes of employees, the prevailing rate for unskilled labor may be taken; the rates for higher grades of labor should represent approximately the unskilled-labor wage plus the cost of training the unskilled employee for the higher position. Where union labor is employed the union should employ regularly a competent

time-study engineer, who may inspect the conditions of employment and report upon their fairness. Many misunderstandings between the labor-unions and the management are due to the fact that the unions do not have full and accurate information as to the actual conditions.

4. There must be a certainty that rates will not be cut, once they are established on a scientific basis, unless there is a fundamental change in conditions. With such an assurance, the employees may freely exert themselves to earn the highest bonuses possible. Accurate preliminary time-study is the best safeguard against rate-cutting. Incidentally, time study must not be used to speed up those employees who are on a time-wage basis—conditions are so variable that only unfairness and dissatisfaction can result.

5. Efficiency must be recognized and rewarded, and inefficiency penalized. It has been found that the incentive necessary to induce workmen to reach the standard of performance is a bonus of not less than 25 per cent of the guaranteed base rate, increasing to nearly 100 per cent in certain classes of work. Of course, the bonus serves the double purpose mentioned above; securing it is a reward, failing to secure it brings its own penalty.

The standard time is not the fastest possible time, but the time determined as being the fastest which the normal workman (selected, however, for his fitness) can maintain consistently without injury to his health and without undue discomfort. The standard time is arrived at in this way: a time study is made; the best method is worked out; and the fastest possible time which can be made by an average workman is ascertained. To this

fastest time an "allowance" is added, varying with the nature of the task. In machine tasks, of course, the allowance may be far less than when a considerable amount of human effort is involved. When the management accordingly insists upon the performance of the task in standard time, the charge of cruelty would seem to be an unfair one; due allowance is made for contingencies, and the task is not one that calls for exertion beyond the workman's normal capabilities.

The charge is often made that the monotony of a routine task is injurious to the worker. This does not seem to be substantiated by the investigations made by psychologists. The monotony, so-called, is not so much in the task as in the mind of the worker. Tasks which would seem to be monotonous are probably so in many cases because the wage is insufficient. When the wage is raised to the point of the worker's contentment the "monotony" disappears.

The employer who fails to make use of a wage-system in which wages can be used as a stimulus to the organization, as well as merely the means of securing the attendance of the workman, is overlooking one of the most valuable functions of wages.

CLASSIFICATION OF EMPLOYEES

Necessity for standardization and classification of jobs.—The installing of a scientific system of wage payment requires, of course, the analysis and standardization of the various occupations. This being done, the rates may be applied. With standardization, classification also becomes necessary, each task being designated by a num-

ber or symbol, and the employees being grouped in classes according to the tasks they perform. For the stabilizing of labor conditions, it is highly desirable not only that such a standardization be effected within the single establishment, but also that the various enterprises of a similar character within a district co-operate in bringing about an approximate uniformity of practice, both as to classification and as to rate of pay for each standard occupation. Not only would production be facilitated but the shifting of workmen from one plant to another by reason of variations in wages and other working conditions would be done away with.

The Westinghouse classification system.—A system of classification, worked out and put into practice by the Westinghouse Electric and Manufacturing Company of Pittsburgh, is described by Mr. W. S. Stearns, Secretary of the Occupations and Rates Committee of the Company.¹

The Westinghouse Company employs 20,000 operatives. The plant has 16 departments, each department being practically a separate factory, with its own superintendent and foremen. All these superintendents report to the general superintendent. Many departments have occupations alike or similar. In order to discourage the shifting of employees from one department to another, the company decided to analyze, classify and standardize its occupations and rates, and appointed, accordingly, an "Occupations and Rates Committee" to carry on the work.

It was found that the original list of 400 distinct occu-

¹ *Industrial Management*, May, 1918.

pations could be condensed into 170, which were adopted as standard, the aim being to have as few as possible and still to let each be distinguished by some peculiarity, so that it would not be confused with any other occupation.

The rates for each occupation were then tabulated and equalized, and two books were made up: (1) the foreman's book, showing all occupations used in his section and the rates which the foreman was authorized to pay; (2) the superintendent's book, showing, for every occupation used in the works, all the sections using it and the rates of pay authorized.

Since the most logical classification of workers is one based on the workman's value to industry in his particular occupation, all workmen receiving the same rate were put in the same class, regardless of occupation. Five classes—A, B, C, D, E—were established, distinguished as follows:

Class A—Leaders, experimental workers, men with highest skill and judgment.

Class B—Accurate, dependable workers, less experienced.

Class C—Workmen proficient in certain lines only, these being usually repeated or routine operations.

Class D—Workmen who could soon be promoted to Class C.

Class E—Unskilled workmen.

Several wage-systems are used; in each of these the "hiring" rate is, of course, the minimum. The minimum pay in any class is usually the maximum hiring rate for that class, and an increase is given for increased skill; opportunity is also given for advancement to a higher

class. In other words, the rate paid within a given class varies, between fixed limits, with the proficiency of the individual who, when he attains the maximum of the class, is encouraged to try for promotion to the class next above him.

COLLECTIVE BARGAINING

Trade-unions.—Earlier in this chapter it was noted that the amount of wages, while fixed between the limits of the workman's living cost and the disappearance of the employer's profit, is adjusted between these limits by means of bargaining. If these limits are far apart, much depends upon the ability to make a good bargain. Organizations of workmen have been formed in order that this bargaining might be made collective instead of individual. The individual bargaining for himself is at a hopeless disadvantage, and under any but the most enlightened management might be compelled to accept a wage rather near the lower limit—close to the bare cost of subsistence.

Whatever complaint may with apparent justice be made against the labor-unions with respect to their policy of repressing individual advancement, it must be admitted that if a crowd is to remain a crowd it must be held together, the laggards urged forward and the leaders restrained.

It may be that society, in the form of the government, will take upon itself the responsibility of protecting the individual against too bad a bargain, as the unions have done in the past; enlightened business also will be conscious of the fact that the well-being of the workman is a source of profit both to capital and to labor.

Collective bargaining—how accomplished.—It is possible that few people not parties to the making of a collective wage-bargain have more than a vague idea of the actual mechanism by which the relations between the employer and the workmen in such a case are maintained. A modern and representative case of union bargaining may be given, as described in the *Monthly Review of the U. S. Bureau of Labor Statistics*, November, 1917.¹ The arrangement described is that existing at the time between a large manufacturer and the Amalgamated Clothing Workers of America. An agreement was signed in 1916 and renewed for an additional two-year period in 1917.²

Three agencies were established for adjusting the relations between the employer and the employee—the Trade Board, The Wage Board, and the Board of Arbitration.

The Trade Board.—The Trade Board consists of 15 members—7 being elected by the employees from their own number, all of whom are affiliated with the Amalgamated Clothing Workers of America; 7 being representatives of the employing company; and one being an impartial chairman, chosen by the above-mentioned 14 members of the Board. All complaints except those relating to wages are referred to this board.

The Wage Board.—The Wage Board consists of 5 members—2 representatives of each party to the agreement, and a chairman, who is the chairman also of the Trade Board. The Wage Board has exclusive jurisdic-

¹ "Piece-rate Wage-Systems in the Men's Clothing Industry," Boris Emmet, Ph.D.

² For a summary of agreements in the clothing industry in Chicago, Cleveland, Rochester and Baltimore, see *Monthly Labor Review*, June, 1922.

tion over questions involving rates of wages and earnings of employees.

The Board of Arbitration.—The Board of Arbitration consists of one representative of each party and a chairman chosen by these two.

Appeals to the Board of Arbitration may be made from decisions of the Trade Board or the Wage Board, both parties having the right of appeal. The decisions of the Board of Arbitration are final, covering the life of the agreement.

Wage Adjustments.—In this establishment 90 per cent of the workers are paid by the week, that is, on a time-wage basis. The worker, however, is expected to reach a certain standard of production. The established weekly rate is subject to increase, provided the output of the worker exceeds the standard set by the company.

Every operation is standardized in terms of time and money. The time standard is arrived at by time-study and observation, a liberal allowance being made for conditions out of control. The money standard is the time-standard multiplied by a specific rate, the latter being the average earnings per hour, over a number of weeks, of a group of operatives.

Records are kept showing the weekly output of each employee. At the end of the week the actual money value of the work involved in the employees' output is computed on the basis of the standard described above. This actual money-value is known as "amount earned" and is sought for the purpose of comparing it with the weekly wages paid to the worker. If the "amount earned" exceeds the wage, the worker is credited with the

excess as "gain." Such gains are the basis for the granting of an increase in weekly rates to employees.

If, however, the "amount earned" is less than the standard, a "loss" is registered on the record. Names of employees with frequent losses go to the shop chairman (a union representative) who takes up the matter with the employee. If losses continue, the employee is summoned before the Wage Board and given a chance to explain. If he has an acceptable excuse the matter is dropped; if not, he is disciplined by reprimand, suspension, or, in rare cases, discharge.

In this establishment the considerations in rate-fixing are: (1) the best local market-rate for similar work; (2) the relative skill of the worker; (3) the needs of the worker. The final rate is usually about 25 per cent above what is thought to be the best market-rate for similar work. In the clothing industry much of the work is let to contractors and sub-contractors, who by reason of their inefficient business methods are compelled to under-pay their help. If there were a general standardization of rates, Dr. Emmet observes, these sweat-shops would be eliminated and the level of competition would be raised—the basis of competition becoming the ability to organize, manufacture and sell, and not the policy of paying the lowest possible wage.

The unions, as is well known, maintain a policy of opposition to piece-work in any form, even when a bonus is paid, and in their agreements with employers provide, whenever possible, that any change from a time basis to a piece basis shall be made only upon the initiative of the employees.

Non-union collective bargaining.—A non-union collective bargaining plan instituted by a clothing manufacturing company is described in the *Monthly Labor Review*, August, 1918.¹ The three years' operation of the plan has resulted in putting on a collective basis the wage bargaining of the establishment, as well as that of hours, discipline, discharges, and adjustment of grievances. Under the scheme as described, there are three separate bodies, known respectively as the senate, the cabinet and the house of representatives. The senate and the cabinet, both of which represent the interests of the company, were created in June, 1914. The organization of the employees, termed the house of representatives, was formed one year later.

The members of the senate are salaried employees directly connected with the planning of the work of the establishment—heads of departments, superintendents and assistants.

The members of the house of representatives are elected by popular vote of employees. in the ratio of one representative for every fifteen employees, but each department, however small, has at least one representative. Employees are not eligible to election unless they have been in continuous service for at least six months. Elections are held twice a year.

The cabinet consists of members of the executive board of the company, and has the final decision of all matters referred to it by the joint action of the house and the senate. While the cabinet possesses final power, approval is usually given to any action of the lower bodies.

¹ Boris Emmet, Ph.D., "Non-union Collective Bargaining Plan."

An interesting solution of the wage-increase problem under the present abnormal conditions was arrived at by the joint action of the house and senate and approved by the cabinet. Since it is against the policy of the establishment ever to reduce a wage-rate once established, and since the high cost of living has made unusual rates of wages necessary, perhaps only temporarily, the problem of increased wages was solved by the giving to each employee a separate "high-cost-of-living pay envelope" each month. The amount of the extra payment each month is figured by using Bradstreet's index figures as a basis, these index figures representing an average of the prices of 96 articles used in everyday life. As the prices of these articles change, the index figures change, so that they are a fair measure of the increase in the cost of living. This arrangement was made retroactive to December, 1917, when the demand of the employees for increased wages was presented.

The foregoing descriptions of the various wage-systems and the observations which have incidentally been made are in the nature of a consideration of the question, "What are wages and what is the basis of their payment?" We have seen that, from the standpoint of business, wages are the amount which must be paid to the laborer to obtain his most profitable services, which, according to circumstances, may or may not include intelligence, co-operation and good-will. Wage-systems, we observe, are the means whereby business measures or attempts to measure the service paid for.

The important question which follows next in order is "How can the labor cost be reduced?" This does not

mean "How can wages be lowered?" It is not only possible but probable, or even inevitable, that reducing labor costs will actually raise wages, for the reason that production will be cheapened and increased, thereby adding to the economic wealth which all men, laborers included, must share in. This problem is discussed in the next chapter under the title, "The Control of Labor."

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CHAPTER XV

THE CONTROL OF LABOR

ADMINISTRATIVE CONTROL OF LABOR

The control of industry.—Industry—the production of want-satisfying goods—is carried on by the various types and classes of business organizations. Each business organization, as we have noted, is the result of the uniting of certain elements contributed respectively by capital, labor and the public. Each of these three, having made its contribution, desires—if not absolute control—as large a measure of control of industry as it can obtain. Out of this desire for the ultimate power—the right to say finally what shall be or shall not be done—arise the most bitterly contested industrial problems of the day.

Capital, holding the superior strategic position, until quite recently regarded itself as the sole owner of a business enterprise, with the sole right to determine and direct the policies of the business.

The public, by means of legislation, restricts more and more the privileges which capital has possessed; a more radical element, represented by so-called socialism, would deprive capital, as it now exists, of its privileges altogether. Many industrial enterprises have been taken over by the public and are operated as “public utilities.” The list of utilities known as public utilities constantly grows; the problem involved is merely one of efficiency of opera-

tion—whether the utility can serve the public more effectively as a monopoly owned and operated by the public; as a monopoly under private ownership, but regulated by the public; or as a competing enterprise, under private ownership and management.

Labor, represented by such of its organizations as have not forced themselves to be regarded not as members, but as enemies of society, seeks to attain such power as to enable itself to control the processes and conditions of industry. Organized labor is content to let the nominal ownership of capital rest where it may, but desires to lay down the conditions upon which labor shall be employed. The desire for control extends not only to the fixing of the hours of labor and the rates of wages, but also to the methods of operation.¹

So long as the interests of capital, labor and the public are divergent, or apparently so, the conflict between them must continue. These interests in reality, however, are not divergent, but are mutual, if not identical. The situation, which must eventually be recognized, may be

¹The feature of scientific management which seems to be most keenly resented by skilled labor is that whereas the knowledge of the mechanism or processes of production was formerly regarded as the peculiar property of the body of skilled workmen, accumulated by themselves through generations of practical experience and transmitted from one to the other, and held by the workmen themselves somewhat as a salable commodity, scientific management has taken away from the workmen this property, consisting of their accumulated knowledge or skill, and has transferred it to the keeping of capital instead, where it exists in the form of tabulated and detailed instructions, so that by means of an instruction card an unskilled laborer, with a short course of training, can perform the operations which formerly could not be performed except by a skilled workman. The fact that scientific management has made radical changes in the manner of performing the various operations does not affect the essential fact—that the processes under the new régime are, so to speak, the property of the capitalist and not of the workman.

summed up in a single sentence: The proper purpose of industry is the production of the greatest quantity of want-satisfying goods, at the least material and human cost.¹ In other words, the function of industry is the production of wealth; the distribution of wealth is a separate problem, and one which will be taken care of by the operation of economic laws, by mutual agreement of the parties at interest, or by the arbitrament of society. By this it is not meant that any of the parties at interest should neglect any justifiable means of securing a fair distribution of the products of industry, but that the purpose of such an endeavor is defeated in advance if the means made use of include interference with the efficient operation of the industrial machine. "Soldiering," to make the job last longer or to force the employment of additional laborers; the shortening of hours, if with the same ends in view; opposition to improved machinery and methods; strikes, shut-downs, or other methods of curtailing production, in order to force wages or prices upward—all these defeat their own purposes.

Centralization of control is essential.—In order that the most efficient production may be obtained, the functions of the industrial organization must be correlated, coordinated and directed by a single authority exercising control of the entire mechanism. Under the stress of war, industry as a whole is so controlled by the Government. Ordinarily, however, a correlation and common

¹In this connection it must be remembered that what we refer to as a material cost is in the last analysis a human cost, for the destruction of capital in the processes of production is the destruction of what has been produced by human effort in the past.

direction of business organizations is prohibited, through fear of misuse of the power which would be acquired by those in control. Such a centralization of control within a single business organization, fortunately, is not forbidden, although it is difficult to attain to the degree desirable, because of the attempts at retention of control made by the three several contributors—capital, labor and the public.

From the situation as outlined briefly and inadequately above, it would seem that for the good of all—that is, for the securing of the greatest production at the least economic cost—the business organization should be controlled by a single authority representing not one party at interest to the disadvantage of the rest, but representing impartially capital, labor and the public. It is possible for the modern business manager or administrator to hold such a position, especially when he is in active control of a corporation with a large number of stockholders, who are not closely in touch with the operation of the business. Such a manager or administrator is most successful when his policies gain the approbation of the stockholders, the co-operation of the employees, and the good-will of the public. Without these, a permanent success may be considered impossible.

What is meant by the control of labor?—The foregoing paragraphs have been necessary in order that we might have a specific point of view from which to observe and interpret the various movements looking to the control of labor. We may assume that no attempt at labor control is to be commended if its purpose is other than to promote economical production, and by econom-

ical production we mean, as explained above, production that is accomplished at the least material and human cost. Obviously, laborers themselves cannot effect an economical control of their own labor, for they lack a knowledge of the conditions in general to which a business must adapt itself; they lack the power to control other functions of the business with which the labor function must be correlated and coordinated. The control of labor, then, must be the directing of labor by a central authority for the purposes of economical production.

If labor surrenders control, how may its interests be protected?—If labor must surrender itself to the direction of a central authority, how may it be assured of a fair share in the distribution of the wealth which it helps to create? There would seem to be only three reasonably workable methods, one of which, we have seen, is indefensible from the economic standpoint—the use of force, or threats of restricted production. The remaining methods are (1) appeal to public opinion or to boards of arbitration; (2) the enactment of legislation. The success of either of these means is contingent upon an intelligent setting forth of the facts involved and the urging of the claim upon a basis of justice. We cannot believe that these means would fail, although legislation unsupported by public opinion is of little or no value. As business becomes more enlightened, it will be seen more clearly how the well-being of each element of the business organization is dependent upon the well-being of each other element.

Wages not an economic cost.—For accounting pur-

poses, in order to determine the financial profit made by a business enterprise, the payment of wages is included among the costs of production. In the economic sense, however, the payment of wages is not a cost, but a distribution, of the products or profits of industry. Money is a measure of value; money wages, therefore, are a measure of the value of the laborer's services, not of their cost. Money possesses only one utility—exchangeability¹—and this utility is neither destroyed nor diminished when money changes hands, as in the payment of wages—except that the place-value or possession-value of this utility may be in some degree affected, favorably or unfavorably. The real cost of labor, however, if it could be measured in terms of money, would be the value of the goods which must be consumed by the laborer in order that he may do his work, allowance being made for the physical and psychic costs to the laborer himself—the bodily and mental ills or discomforts consequent upon fatigue, monotony of employment or loss of personal freedom.

The rates of wages at a given place and in given occupations are fixed largely by causes beyond the control of the individual employer or the individual laborer. Even if a reduction in the wage rate were an economic saving, or if an increase were an economic gain, the possibility of adjustment of the wage rate could offer but little hope to the individual. The hope of economic gain lies in increasing the efficiency of the worker. A greater productivity with a given economic cost is what is to be desired by the employer and employee.

¹Johnson, *Money and Currency*, ch. II.

REDUCTION OF LABOR COSTS

How may labor costs be reduced?—The whole problem of the control of labor, from the viewpoint of the management, is that of the reduction of labor costs. The solution of the problem, obviously, is to be found not in lowering the rates of wages, but in increasing the productivity of labor. We may now consider in brief outline the practical methods by which employers endeavor to increase the productivity of the working force and thereby to reduce the costs of labor.

1. Improvements in machinery and methods of working.
2. Selection and training of employees.
3. Securing the co-operation of employees.
4. Lengthening the average period of employment.
5. Conserving the supply of labor.

Improvements in machinery.—It is not to be denied that the employer looks upon the workman with a very practical eye. Whatever protestations may be made by the employer with respect to his solicitude for the workman's welfare, the workman will be retained only so long as he is useful. If a machine is invented which will take the place of the workman and perform his task at a lower cost, the machine is installed immediately. Incidentally, this policy in the long run is of benefit to the working classes as well as to the employing classes. When power looms were introduced in England, the resentment of the spinners expressed itself in riots and destruction of the machinery. When oil pipe-lines were introduced in Pennsylvania, the teamsters tore them up; the inventor of the pipe-line system of transporting oil died without see-

ing his plan in practical operation. Yet now, unobtrusive as are the pipe-lines and little known to the public, they form a net-work over the continent. Despite the lessons of industrial history, the workman of today, dressed in machine-made garments, sits by the light of his kerosene lamp, devising means of obstructing the progress of scientific management.

Engine power is usually cheaper than man power, and once installed is more controllable. The machine, to the extent of its capabilities, solves at once the whole labor problem. As compared with labor, the machine adheres in its operation more closely to the predetermined standards, costs less for power and supervision, eliminates the turnover problem, and is capable of almost indefinite renewal.

Since the potentialities of a given machine are fairly well understood, it is possible to select machines of the exact types and sizes required for a given purpose. In a projected installation of machinery, where the outlay is of sufficient importance, the specifications covering the installation are drawn by competent engineers with the greatest care. The same principle is now being adopted in the employment of men. While the human factors in production are more variable than are the machine factors and are also more adaptable to modified conditions, the human factors are not less in need of scientific analysis.

Improvements in working methods.—Better working methods, developed by means of time and motion study, are a direct means of reducing the labor cost. A fact of the greatest importance is that each workman is

to be looked upon not as a unit, independent of his fellow-workmen, but as a part of a mechanism each movement of which must be synchronized with every other movement. It would be of little use, for example, as Mr. Frank B. Gilbreth explains, to increase the working capacity of a single bricklayer. When a number of bricklayers are engaged in building a wall, the wall must rise evenly, and no workman may build his own section of the wall above the level maintained by the working group. Obviously, since no bricklayer has authority over his fellows, the only way in which an improvement can be effected is by the substitution of more efficient methods in the group as a whole. The effecting of such an improvement is distinctly a function of the management and not of the workman.

Physical capacity of the workman.—When the most efficient combination of movements has been ascertained, it is necessary next to determine the relation between the task and the physical capacity of the workman. This phase of the problem consists largely in determining by careful experimentation the length and frequency of the rest-periods required by the nature of the task. By means of a scientific adjustment of the intervals of rest to the expenditure of energy by the worker, a larger day's work may be accomplished, with less physical and mental strain. An understanding of the principles governing industrial fatigue is necessary to an intelligent consideration of working methods, as well as of the hours of labor.

Fatigue.—The following paragraphs, explaining the sources of fatigue, with the considerations affecting the amount of rest and sleep required by the worker, are

quoted or adapted from Hollingsworth and Poffenberger's *Applied Psychology*.¹

"There are two sources of fatigue, each of which needs a brief description:

"First, fatigue may be the result of the consumption of energy-producing material as a result of activity, very much as the production of energy in the steam engine requires the burning of coal. A state of absolute fatigue would result from a total consumption of energy-producing material, after which work would be impossible until a new stock of material was provided. The energy-producing substance in the muscle is glycogen, a chemical substance manufactured in the liver and in the muscles, from material taken from the blood stream. Energy is set free when the oxygen of the blood unites with this glycogen in the muscle. In strenuous muscular activity the glycogen is used more rapidly than it can be supplied and consequently the supply is depleted.

"Second, complete fatigue from exhaustion of glycogen, except under extreme conditions, does not occur because activity is stopped from another cause before that danger point is reached. The consumption of the energy-producing material leaves certain by-products, among them being carbon dioxide and lactic acid, which act as poisons to the tissues and when permitted to accumulate in sufficient quantities, may clog the muscle and retard or inhibit its action. Under ordinary circumstances these waste products are eliminated about as rapidly as they are produced, but under prolonged activity they accumulate faster than they can be removed. It is the presence of these poisons which in most cases is responsible for our fatigue states rather than the actual exhaustion of the combustible material, glycogen."

"Fatigue, in itself, need not be harmful, so that the first signs of fatigue do not indicate the end of the optimum working period. Theoretically, the work period should end when the reduction due to the onset of fatigue becomes enough greater than the improvement due to practice or adaptation, that further production costs too much in energy for the results obtained. The rests should be just long enough to permit recovery from fatigue without losing further time or momentum. Such a schedule has been prepared for the work of folding handkerchiefs. Each hour of the day is divided into six-minute periods, and for each five minutes of work there is one minute of rest. Although one-sixth of the day is spent in rest, the more intense work possible during the other five-sixths results in about three times as much work from each employee. Schedules for other sorts of work have been prepared with equal increase in efficiency. A five-minute-rest period for each hour of work is a good schedule for mental work."

¹D. Appleton & Company, New York, 1917.

Mental fatigue.—The foregoing relates to muscular fatigue. With respect to nerve fatigue and mental fatigue, it is shown that nerve fatigue, for practical purposes, cannot be separated from muscular fatigue, since one involves the other. Mental fatigue may follow nerve and muscle activity, although in most cases it is not the onset of mental fatigue so much as it is the lack of interest and incentive which affects efficiency. Proof of this lies in the fact that where fatigue is apparently present an increased incentive will bring the output up to normal.

Measurement of fatigue.—As for the measurement of fatigue, "measurement in terms of output or production, in which each person learns to interpret certain conscious signs as indicative of his safe limit, is about the only rule that can be laid down. The establishment of fatigue standards for various kinds of work is one of the most important problems which efficiency engineers are attempting to solve."

Rest and sleep.—Fatigue may be removed by rest and sleep, and sometimes by a change of occupation. A change of occupation is a rest only if the fatigue is "local," that is, confined to certain mechanisms of the body. If fatigue is due to a general exhaustion of energy-producing material a change of occupation is not a rest, although lighter work may bring relief.

While the problem of rest-intervals during the day is a direct problem of business management, and of more than sufficient importance to justify the attention which has been given to it here, the problem of the amount of sleep required, although also of interest, is less intimately associated with our subject. It will be sufficient to give

the conclusions of the authors quoted above—that to a certain extent, and more so for some individuals than for others, relaxation may take the place of sleep; that if sleep results from fatigue and constitutes a process of repair, obviously the amount of sleep required must depend upon the amount of cumulative fatigue. The amount of sleep required is a problem to be solved for each individual case and must be sufficient to keep the worker in a state of physical and mental efficiency, this to be determined by the amount and quality of work done over a long period of time. In no case should tests be limited to periods as short as one or two weeks, for cumulative effects might be harmful and yet not show themselves within this time.

The eight-hour day.—From the point of view of the management, there is little, if any, essential difference between the problem of the length of the work-day and that of the number and frequency of the rest-periods within the day. What is desired by the management is the most economical production—the greatest return for the wages paid, consistent with the physical well-being of the worker. If this can be secured with an eight-hour day, the management will favor the eight-hour day.¹

There is, perhaps, no especial reason why the eight-hour day should have been chosen as the standard working day by those who have been contending for shorter hours, except that, in the first place, an eight-hour day

¹The distinction must be remembered between the eight-hour day as a working period and the eight-hour day as a basis for the computation of wages. In many cases the eight-hour day is desired by the workers merely for the sake of the overtime rates which apply as they continue to work ten or twelve hours a day as before. The present discussion is based on an actual work day of eight hours.

is shorter than a nine, ten or twelve-hour day, and its adoption would be something gained; also that when work is continuous through the twenty-four hours, the eight-hour day makes possible three "shifts" of equal length.

During the period of a national emergency, such as the European War, the interests of capital and labor may become merged with the interests of society. But even during such a period, the self-seeking instincts of capital and labor are revealed in inflated profits and in wage scales that make soldiers' pay for the most laborious work and the greatest risks seem ridiculous. Even during that period of stress, labor insisted upon its strategic advantage to obtain from the Government the Adamson Law, limiting the hours of railroad labor. In ordinary times, however, there is no denying the fact that the employer always wants more work in exchange for less wages, and that the employee always wants more wages for less work. Shorter hours are a form of higher wages. It is unlikely that if the eight-hour day should become universal the workers would be content with eight hours—in all probability they would contend for a six-hour day as earnestly as they now contend for the eight-hour day. In fact, a demand for the six-hour day is already incorporated in the Socialist platform. The demand for the shorter working day, on the part of the workers, is a demand for higher wages, to which there is no limit, except the capacity of the employer to pay.

In general, there is but little connection between the length of the working day and the amount of energy expended by the worker. Conditions vary with every industry, every business and every individual. What is

a reasonable length of day for some occupations and some individuals would be far too long or far too short for others, with respect to its demands upon the worker's store of energy. It is essential, in any case, that the day be short enough to protect the worker from the effects of over-fatigue.

As we have noted in the chapter on "Wages," however, the worker is paid not only for expending his energy, but also for giving up his time and personal freedom. With respect to the element of time, as distinct from that of the expenditure of physical energy, it is much less difficult to fix upon a length of work-day which tends to be fair to all alike. The worker should have a reasonable amount of time left for his own purposes, as distinct from those of his employer. He should have also a reasonable time for self-improvement, which is profitable to the employer, as well as to himself. Since the worker must spend, in most cases, several hours a day in attending to his household chores, private business affairs, and the like, and in going to and from work, if the work-day is much over eight hours he can have but little time for recreation, study or social pleasures. On this ground alone, it is probable that the eight-hour day is justified.

Taking the eight-hour day as meaning the same thing in general as the shorter work-day, we may present briefly the leading arguments in the matter—from the points of view of the worker, of the employer and of society. The arguments for the shorter work-day, from the worker's point of view and from the social point of view, are set forth in *The Case for the Shorter Work*

Day,¹ compiled under the direction of Mr. Louis D. Brandeis, prior to his appointment as associate justice of the Supreme Court. From the thousand pages or more of this volume we may select a few of the more important considerations.

1. Long hours are a menace to national vitality, since immunity from disease is due chiefly to the individual's adequate power of resistance. Workers over-fatigued and exhausted are more readily attacked by degenerative, occupational and other diseases. In addition to causing fatigue predisposing to disease, long hours of labor cause premature aging of the worker and injury through continued strain upon eyes, ears and other organs of the body.

2. Modern industry is characterized by increased strain. Machinery is increasingly speeded up; processes become more complex; all this involves a correspondingly greater physical strain upon the worker. What was a fair length of work-day under former conditions is now no longer reasonable.

3. With the introduction of machinery and with the increased hazard in general to the worker, it is imperative that the worker shall be alert and able to think and act quickly in emergencies. "Physiological reaction time" is the name given to the interval between the occurrence of some external phenomenon and the signal of its having been perceived by an individual. This interval is greatly increased by fatigue. When the brain is fatigued attention flags and reaction time is retarded. Hence,

¹Brief for the defendant, *Bunting vs. The State of Oregon*. U. S. Supreme Court, October Term, 1915.

after over-exertion, workmen are subject to increased danger, because then reaction time is greatest and attention is at its minimum.

4. Excessive working hours bring about a moral degeneration, due directly to over-fatigue. Laxity of moral fiber follows physical debility. After excessive labor, the overtaxed worker is left stupefied or responds most readily to coarse pleasures or excitements.

5. Overwork has an evil effect upon the general welfare. The loss of human energy, due to excessive working hours, is a national loss, and must inevitably result in lowering the nation's prosperity.

6. Shorter hours increase the efficiency of the workers, and also lead to improvement in the quality of output.

7. Shorter hours and other forms of higher wages lead to improvements in the planning of work by the management. When higher wages are paid, increased unit costs may result, which may be offset by an increase in production, due to a more careful planning and scheduling of work.

8. Shorter hours, together with higher money wages, lead to the invention and adoption of improved machinery, so that the cost of production is not necessarily increased.

9. Shorter hours lead to regularization of production and continuity of employment. When no restrictions are placed on the hours of work in a seasonal industry, the tendency is to concentrate the work in a brief busy season with long hours of overtime. Hour regulation forces a distribution of the work over a longer period.

Some very practical considerations connected with the

problem of how many hours a day it is best to work have been set forth by Mr. W. A. Gries, Assistant Secretary and Supervisor of Welfare, of the Jeffery Manufacturing Company, Columbus, Ohio.¹

"The other morning, as I was going to work, handbills were being distributed by the advocates of the eight-hour day.

"This circular gave a list of shops that are now operating on the eight-hour schedule at different points over the country. It was ablaze with headlines proclaiming the advantages to be gained, the liberties to be won, and the domestic happiness to be secured when the advent of this shorter workday should be a reality.

"It is true, perhaps, that there are some lines of work in which ten hours is too long a period to work. In fact there may be lines in which eight, yes, even six hours may be too long. But one does not have to reason deeply to discover that the hours we work must be governed not by the law of supply and demand, as in the case of wages, but by production. If by working eight hours one can accomplish as much as by working ten hours, why is it that nearly every factory over the country is not now only working ten hours, but twelve to fourteen, and willing to pay time and one-half for all work beyond the ten-hour limit? The answer is self-evident.

"Manufacturing today does not resolve itself into the question of human endurance, but rather that of machine possibilities. By that we mean, the man in the shop today is not called upon to exhaust his physical energy in ten hours' work to a degree beyond that to which he used to exert himself to do eight or even six hours' work. As we pass through the shops, it is not an uncommon sight to see men seated for ten, twenty, thirty, and forty minutes, watching their machines do the work. Machine production has so developed that the man is no longer called upon to exert great physical energy.

"The recent strikes over the country do not appear to us as being started for the purpose of shortening the work-day, but rather to increase the wage rate. Now, why can we not be honest about it? Where competition is keen, the employer knows that if he raises wages he must raise the price of his product. If he cannot do this, he must increase his production. If his machines are running to their maximum on the ten-hour schedule, and his prices have been made on that basis, any other arrangement must entail danger all along the line. Increase of production may be equally as difficult, owing to the fact that present production is based upon maximum output of the ten-hour day.

"Every man who works or produces is a business man. His labor, or his ability to produce, is his capital. If he limits his production, he assaults his own capital, and necessarily goes backward instead of forward. Decreasing the profit by limiting the production is a most effective agent in causing labor trouble.

¹"The Eight-hour Day" 100%, March, 1916.

"The eight-hour day, if it is to come, and we do not say that it should not, must be brought about gradually and among those lines of industry that will most readily lend themselves to the change; but there will always be an element that will not conveniently adjust itself. If we are to work only eight hours or six hours our cost of living will not be lowered, hence our wage rate must necessarily rise to meet the necessity. This might work out all right if our country were in a position to dictate the industrial policy of the world. But it is not. If our production is decreased and our wages increased, it ultimately means that those countries that have not decreased their production or increased their wages will be in a position to outsell us, no matter how high a tariff wall we may erect. Until we can more completely control the world market through a lower production cost, we shall be compelled to act conservatively if we wish to maintain our present high standards of American living."

The tendency of the times undoubtedly is toward a general adoption of the eight-hour day. Among the concerns which have recently yielded to the pressure of the demand for a shorter working day is the United States Steel Corporation, employing 275,000 men. The subjoined announcement of the change from the ten-hour to the eight-hour day is taken from the *New York Sun*, September 25, 1918:

The United States Steel Corporation has adopted the eight-hour basic day, according to an announcement made yesterday by Elbert H. Gary, chairman of the corporation. The principle of the eight-hour basic day is similar to that of the Adamson law governing railroad employees and gives the workman an eight-hour day with time and one-half for overtime and double pay for Sundays and holidays.

Judge Gary's statement follows:

"The finance committee of the United States Steel Corporation today unanimously approved the recommendation of the chairman and president of the corporation and of the presidents of subsidiary companies to adopt the eight-hour basic day, to become effective October 1, 1918. The open shop plan heretofore in force throughout the works will be continued."

The corporation and its subsidiaries have approximately 275,000 men on their payrolls and the new basis for a day's work is considered equivalent to a 25 per cent. increase in wages for labor. The corporation now pays \$4.20 for a ten-hour day to common labor.

Following the decision of the United States Steel

Corporation with respect to the adoption of the eight-hour basic day, it was announced that the same course would be taken by the entire steel industry. It is to be noted that the hours of labor in reality are not to be shortened, but that the workmen will continue to work ten or twelve hours a day as before, at a higher wage, however, resulting from increased "over-time." The *New York Times* estimates the increase in wages as amounting to about ten per cent.

Selection and training of employees.—Assuming that labor-saving machinery and methods have been installed and working conditions in general made as favorable as possible with a view to utilizing to the best advantage the services of the working force that must be maintained, the next phase of the problem of labor-cost reduction is to find and place in their respective positions the workers best adapted to the various tasks. The various tasks require varying degrees of strength or skill; the problem is to place at each task a worker with no more nor less strength or skill than is required. If this is not done, one of two things must happen: the task will be improperly performed, or else the worker's surplusage of strength or skill will be wasted.

While there is no more disastrous policy than that of hiring low-priced men and expecting them to perform the work of competent men, it is undoubtedly true, conversely, that few businesses are guiltless of employing expensive labor in the doing of tasks which, in part, if not in whole, could be done fully as well by relatively unskilled labor. This applies to the business throughout, from the manager who neglects the leaving of routine

or petty details to subordinates, down to the skilled workman, who may be permitted to get together his material, or do preparatory work which, if plans had been made and carried out, could have been done by men costing only half as much in wages.¹ So far as is possible the various operations which enter into production should be segregated into groups, each composed of operations which require a somewhat similar degree of skill, so that these groups or sets of operations may be assigned to workmen with no more and no less than the appropriate skill, and so that the more skilled workman will not spend a part of his time on an operation which could have been included in a lower group.

It is assumed, likewise, that the mere fact that a certain workman can be hired at low wages does not mean that it is economical to employ him at a low-grade task, if he shows ability to perform tasks of a higher grade.

The employment department.—One of the most successful innovations in management, having as its object a more intelligent selection and training and placement of employees, is the centralized employment department. The duties of the employment department include:

1. The keeping of the service records of employees.
2. The maintaining of a list of eligible applicants for positions.
3. The examination, physical and mental, of applicants.

¹While the employment of a high-grade workman at a low-grade task causes a financial loss to the employer, the economic loss involved is not the extra cost in wages, but the loss of productivity, which would have been increased if the high-grade workman had been employed at a task which would have called forth his skill.

4. The selection of applicants, and their assignment to vacancies.

5. The standardization of wages in different departments for similar work, which includes the classification of positions, with schedule of wages and name or symbol for each position.¹

6. The supervision of the training of employees both for regular promotion and for the filling of emergency positions, so that when a vacancy suddenly occurs someone within the organization is in readiness to fill it temporarily, if not permanently.²

In establishments where a centralized employment department has been instituted, the function of hiring and discharging men is taken away from the foreman and given to an employment manager. While this power is taken away from the foreman, it is recognized that it is important to preserve the foreman's good-will and to maintain a spirit of co-operation in the sub-departments, so that a man will not be hired and put to work, or kept at work, without the foreman's consent. This concentration of authority in a single department responsible only to the management does away with the favoritism that so long has been a hindrance to the promotion of men upon their merits alone.

While the supervisor or foreman may not discharge a workman from the employ of the company, he has the

¹For classification of positions, see chapter on "Wages."

²To facilitate the accounting, where employees are trained for alternate positions, and where a well-paid workman may be temporarily employed at a low-grade task, the practice in some establishments is to make use of the expense charge symbol "retainers." The cost-keeping system in use permits the excess wages paid in such a case to be charged to "retainers."

right to suspend a workman, in which event the employee may appeal to the employment manager. If the workman is sustained in his appeal, and if matters cannot be smoothed over so that he may return and resume friendly relations with his former supervisor, a place will be found for him in another department. Herewith is given a self-explanatory order covering such matters, issued in the Franklin Shops.¹

TO ALL FOREMEN AND DESPATCH CLERKS

Subject:—Discharges and Disciplinary Measures.

Workmen *whose records show* that they cannot do the work satisfactorily, in the department in which they are located, may, after proper consideration by their Foreman, be released from that department, but not from the employ of the company.

The Employees' Record Card (Form A-210) must be filled out by the Foreman and sent to the Employment Superintendent for investigation. The Time Office will recognize only those payment cards signed by the Employment Superintendent and endorsed by the writer.

When a workman violates the Company's rules, he must be sent to the Employment Superintendent and the complete facts reported at once to the latter by the Foreman.

Payment and Record cards (Form A-36) will hereafter be made out by the Employment Superintendent only after the workman's case is investigated and the circumstances warrant discharging him.

Foremen have only departmental disciplinary authority. The Employment Superintendent shall act on the merits of each case in a fair and impartial manner.

Securing the co-operation of employees.—The placing of employees in congenial positions, to which they are suited by nature and training, goes far toward securing the necessary spirit of co-operation.

It is essential, however, to provide immediate incentives to efficient performance. The employee must receive adequate wages, if his co-operation is to be secured, and should receive them under a system in which the amount

¹*Taylor System in Franklin Management*, p. 81.

of the wage varies directly with the efficiency of the worker. Methods of payment which accomplish this purpose are described in the chapter entitled "Wage Systems."

Welfare work, if undertaken in sincerity, may do much toward maintaining a spirit of co-operation in the working personnel.

Profit-sharing in its several forms may also tend to promote a spirit of co-operation. Welfare work and profit-sharing are considered in subsequent sections of this book, primarily in their relation to the problem of labor turnover.

The most effective means of obtaining the active or even enthusiastic co-operation of the workers is to give them what is known as a "square deal." The payment of wages in proportion to performance is one form of the square deal; the recognition of any efforts which the workers may make to promote the interests of the business is another. A third, and less obvious, form of giving the men a square deal, however, is in the recognition of the fact that most men work not only for wages, but for promotion. When a man casts in his lot with a business enterprise, he rightly feels that if he can increase his usefulness and fit himself to occupy higher positions as they become vacant, he has a first claim upon those positions. If the management cannot fill its higher positions with men brought up from the ranks, there is something wrong with the system—the men have not been given a fair opportunity. The employer has either failed to provide for the training of his men, or has ignored their claims. When an employee has spent his spare time

in preparing himself for a better place, and then sees that place given to an outsider, less competent, perhaps, than he knows himself to be, he is filled with a spirit of resentment instead of one of co-operation, and so are the other employees, in sympathy with him. He has not had a square deal, and everybody knows it.

The spirit of the square deal expresses itself in the personal relations between the management and the employees, as well as in the so-called business relations. The men will work better for a manager who knows them by name. Discipline, of course, must be maintained, and impudent "familiarity" or boisterousness strictly suppressed, but, after all, men are men, and not machines.

A manager said recently: "We take care of our men. What does it matter whether some poor fellow has broken an arm or one of the ten commandments? He is in trouble and needs a lift, and he gets it." Needless to say, these men take care of their manager.

CHAPTER XVI
THE CONTROL OF LABOR
(*Continued*)

REDUCTION OF LABOR TURNOVER

Continuity of employment as a factor in labor cost.—In the preceding chapter the reduction of labor costs is considered particularly with reference to the means whereby the working efficiency of the employee may be increased. In the pages following, attention will be given specifically to the various means of lengthening the period of employment.

Maintenance work, including profit-sharing and housing, will be considered here, since in most of its phases it must be regarded as being instituted primarily for the purpose of keeping men from leaving their jobs, although designed as well to promote a unity of purpose and a general spirit of co-operation.

The modern organization of business functions demands that the men in charge of these functions be so familiar with the system that they are able to adopt as habits the working methods of the establishment in which they are employed, performing their tasks with the unconscious ease that can come only with continuous practice. With each change of occupation, and practically with each change of employment, the workman must form new habits before he can perform the routine task

with any degree of efficiency. For this reason, it is desirable that changes be as infrequent as possible, and also that working methods in different establishments be as uniform as possible, so that when changes of employment occur the loss will be minimized.

The problem of labor turnover.—The turnover problem is that of avoidable "hiring and firing." It would not be desirable, even if it were possible, to do away entirely with changes in personnel. A reasonable number of new men with new ideas and new enthusiasms, with experience gained in different places, are undoubtedly an asset to a business organization. In reducing labor turnover the aim is principally to eliminate the expense of hiring and teaching men who will not stay long enough to benefit their employers or themselves. This cost is almost incredible in amount—ranging from about \$10 to \$200 for each replacement. The average cost is perhaps \$100. The cost is least in replacements of unskilled laborers, and greatest in replacements of partially skilled laborers, who must be taught to use high-priced machines, and who are brought to the point of usefulness only by means of expensive courses of training, involving the consumption of materials as well as a loss of the time of machines and supervisors. Skilled workmen may adapt themselves to a new job with relatively little difficulty, but in any case there is a disturbance of the schedules of operations and an interference with team-work—to say nothing of the other unavoidable costs involved. The costs of replacement, roughly analyzed, will be seen to be somewhat as follows:

1. Cost of paying off old employees and of finding,

interviewing and selecting new employees, including cost of medical and other examinations and tests.

2. Cost of teaching, including course in training department and extra supervision at regular work.

3. Cost of materials wasted; loss due to production of "seconds."

4. Loss due to reduction in output (1) of the new employee and (2) of those working with him, since schedule is disarranged.

5. Damage to machinery; extra risk of accidents (1) to the new employee and (2) to those working with him.

6. Fixed charges of idle or inefficiently operated machines.

7. Proportion of overhead of employment and other departments not included in the above.

Calculation of labor turnover.—In the usual sense of the term, labor turnover means simply the number of replacements during a given period, usually a year, expressed as a percentage of the number of employees on the payroll at the end of the period, or of the average number on the payroll during the period. The turnover may be computed for each week or month, and the yearly rate derived from the figures so obtained. Occasionally, the rate of turnover is expressed in terms of the average length of the period of employment, with a year as a basis—an average term of employment of three months giving a turnover figure of 400 per cent, of six months, 200 per cent, of twelve months, 100 per cent, and so on.

Since the number of hirings during the period may not reflect accurately the actual conditions prevailing, especially in cases where a business is growing rapidly, or

where the demand for its products is seasonal, it is thought best to separate hirings into those which are avoidable and those which are unavoidable, and to calculate the rate of turnover on the basis of the theoretically avoidable hirings. This rate is called the "refined turnover rate," and represents, obviously, the portion of the turnover which is subject to reduction. Certain data or statistics are prerequisite to such a calculation. The statistics bearing on this question should answer:

1. How many men on the payroll represent a permanent increase?
2. How many represent hirings to fill places left vacant from unavoidable causes?
3. Is there a distinct seasonal fluctuation that must be met?¹

Having secured the necessary records and other data, the "refined" turnover rate may be calculated as follows:²

| | |
|--------------------------------------|-------|
| Number at present on payroll | 500 |
| Number one year ago..... | 450 |
| | <hr/> |
| Permanent increase..... | 50 |
| Necessary replacements..... | 25 |
| Unavoidable hirings (50+25)..... | 75 |
| Number of hirings during year..... | 500 |
| Less unavoidable hirings..... | 75 |
| | <hr/> |
| Theoretically avoidable hirings..... | 425 |

Refined turnover, $\frac{425}{500} = 85$ per cent.

¹ See *Industrial Management*, May, 1918, also September, 1918, for discussions of these features of the turnover problem.

² American Academy of Political and Social Science, *Annals*, May, 1916.

This calculation is made upon the assumption that during the year 425 theoretically avoidable hirings have been made to secure a working force of 500.

If the calculation were made upon the basis of the average number on the payroll during the year, instead of the number at the end of the year, the figure would be $\frac{500+450}{2}=475$, average for year; $\frac{425}{475}=89.5$ per cent.

The term "avoidable," as applied to hirings, refers, obviously, to changes that might have been prevented by better employment methods, better working conditions, and a more even distribution of production throughout the year.

Causes of leaving work.—When employees leave work, they have either died, resigned or "quit," been "laid off," suspended, or discharged. An employee is "laid off" either temporarily or permanently when there is an insufficiency of work, or on account of sickness. He may be "suspended" as a disciplinary measure, or "discharged" when unsatisfactory. It is the custom in many establishments to refuse to hire again an employee who has once "quit." The fact that the employee knows when he is quitting that he cuts himself off from any chance of future employment in the establishment undoubtedly tends to decrease the rate of turnover, although the rule should not be applied too strictly.¹

¹ In the Franklin shops, the following rule obtains: "If a man wilfully leaves the employ of the company when we wish to retain him, and he is again employed, he sacrifices the credit for years of service. When men return within one year, however, after having been removed from service by the company, no change is made in the rating. If they return after an absence of one year or more, the years of absence only are deducted from the rating. *Taylor System in the Frankling Shops*, p. 92.

Figures (which unfortunately have little significance, because the underlying causes are not ascertainable) show that in 100,000 cases where employees left work, 74.6 per cent quit, 12.2 per cent were laid off, and that 13.2 per cent were discharged.¹

We should like to know why 74,600 men voluntarily left their jobs. If working conditions were disagreeable, they should be improved. If wages were better elsewhere, it is high time that wages were standardized. Of the 12,200 who were laid off, how many could have been kept at work if production had been regularized—that is, distributed more evenly over the year? Of the 13,200 who were discharged, how many might have been brought to the point of usefulness, by means of a little kindness, and a little teaching?

It has come to be required, in well-managed establishments, that the official in charge give a statement of the reason for the occurrence of each vacancy on the payroll. Each employee who quits is questioned as to the reason why, and the information is filed on a card. The purpose of this is obvious—if the causes of dissatisfaction can be ascertained, they may possibly be removed.

It cannot be assumed, of course, that there is always, or even usually, an adequate external cause for the workman's leaving. The roving spirit, the desire to see more of life and more of the world, is one which the employment department cannot hope entirely to subdue. Neither is the roving spirit wholly to be deprecated. It is quite possible that Columbus would not have discovered Amer-

¹ *Industrial Management*, March, 1918.

ica if he had been satisfied with a perfectly good job in his home town.

Classification of causes of leaving work.—The following classification, by Miss Mary B. Gilson, Employment and Service Superintendent of "The Clothcraft Shops," indicates the nature of the "avoidable" and "unavoidable" causes of leaving work:

"Under 'avoidable' we classify:

- E. Earnings
- W. Work
- T. Treatment
- C. Hours and other working conditions

"Under 'unavoidable' we classify:

- D. Death
- R. Retirement
- M. Marriage
- O. Promotion out of organization
- L. Lay-off or discharge
- H. Home conditions altered
- V. Left vicinity
- S. Sickness or accident
- P.S. Sickness previous to employment
- N. In National service"¹

Standardization of practice in computing labor turnover.—In its editorial comment upon the turnover data submitted by its correspondents, *Industrial Management*, September, 1918, points out the need for "standardization of names, definitions and formulas connected with a term that is of such significance in employment affairs." The three major points upon

¹*Industrial Management*, September, 1918.

which there is a difference of opinion as to the factors which should be included in computations of labor turnover, as indicated by the data referred to and substantially as pointed out by the editors of *Industrial Management*, are:

1. Shall the rate be computed upon "hirings," or "separations"?

2. Shall the employment figures be taken from the force report—which is made up from the attendance records—or from the payroll?

3. Shall all separations be counted, or only the "avoidable" separations?

Other points which might be agreed upon are: Should calculations be made weekly, or monthly, as the basis for the year's complete figures; should the number on the force report or payroll be that of the end of the computation period, or the average for the period? The argument for the former course would seem to be: "We have succeeded in building up our working force to its present number. Now let us see what it has cost us to reach this point—how many men we have had to hire and fire in order to make the force what it now is, making allowance, of course, for the growth or shrinkage of the business." The argument for the latter course might be: "We have now a certain number of men on the payroll, but from experience we know that they cannot all be regarded as permanent acquisitions to the working force. In order to find out what our force really is, we must take the average for the period of computation, making due allowance for the growth or shrinkage of the business."

Means of reducing labor turnover.—Since classi-

fication, even though imperfect, is an aid to understanding, we may get a clearer idea of the labor turnover problem and its possible solution if we look upon the various means of reducing the rate of turnover as coming under one or the other of the following heads:

1. Standardization of working conditions and wage rates within the community, so that employees will not be lured from one establishment to another by higher pay or more agreeable working conditions.

2. Regularization of employment, so that fewer men will be laid off in a slack season and hired again in a busy season. A lower wage rate with steady work is more to be desired by the employee than a higher rate with periods of idleness, in which his expenses are not lessened, even if they are not increased. The idle workman usually must spend money in looking for a job, and he has more opportunities, as well as temptations, to spend money in various other ways. The high wage-rate prevailing in some occupations is to be accounted for principally by the fact that employment in those occupations is not continuous.

The employer, particularly the manufacturer, may do much toward regularizing the production and with it the employment conditions of his plant:

- (a) By planning as far as possible in advance, purchasing materials and laying out the work, attention being given particularly to the creation of a demand for staple or standardized articles. By this means manufacturing can be carried on farther in advance of sales and more evenly distributed to conform to the capacity of the plant as operated by a normal working force.

(b) By the manufacture, during the dull season, of such articles or parts as may be considered standard or staple. Even although the manufacture of an article in question may not safely be finished until the season's market preferences have been determined, certain parts of the new model can be made with a reasonable certainty that these standard parts will not be included among those affected by changes in design.

(c) By insistence upon long delivery-dates, so that orders will not have to be "rushed."

(d) By taking contracts during the dull season for turning out work for other manufacturers, for whom the season may be the "busy" one.¹

3. Assuming that such an equalization of wages and working conditions and regularization of production has been effected, the remaining means of reducing the rate of turnover would obviously be the creation of various ties between the workman and the establishment wherein he is employed. Workmen will drift from one place to another, in spite of anything that can be done, but the extent to which this drifting occurs will be lessened if, on the one hand, the apparent advantages of changing employment have been removed, and if, on the other hand, certain ties are created which we may classify as (a) personal; (b) financial; (c) physical and social.

Among personal ties we may include: the interest or pride taken by the men in their work—this depending largely upon the personal relations between men and management; the friendships the employees may form;

¹ See *Monthly Labor Review*, August, 1918, "Labor Survey of Cleveland Cloak Industry."

and the contentment they may have in their surroundings. Certain phases of welfare work undoubtedly tend to create or strengthen the personal associations which, other things being equal, would influence employees to remain rather than to leave.

Among financial ties, besides prospects of promotion, would be included: the various pecuniary rewards for continuity of service such as are offered under plans of profit-sharing, stock-ownership or pensions for retired employees. Group-insurance, while not always contingent upon length of service, may also be included with the above.

Among what we have called physical or social ties may be included whatever would make it difficult or expensive for the employee to move to another place. In this category, we may include the housing of employees, especially when the employee is persuaded to purchase the house he occupies. If the employee can be established in a house owned by or purchased from the employer, in a community with schools, churches and recreation centers, the probability of the employee's leaving work is greatly decreased.

In the following pages these phases of the labor problem, together with what we have called the "conservation of labor," will be considered briefly, under the inclusive title "Maintenance Work."

"MAINTENANCE WORK"

Maintenance work defined.—Maintenance work, as defined by Alexander Fleisher, Ph.D., Supervisor of the Welfare Division of the Metropolitan Life Insurance

Company, is: "That service given by employers to their employees, beyond the requirements imposed by law or forced by employees, and in addition to the conditions of employment prevalent in their community." "Conditions of employment" here refers to wages, hours of labor, safety, comfort and other conditions. The scope of maintenance work is indicated by Dr. Fleisher in the following synopsis:¹

1. Medical Work

(a) Preventive

- (1) Medical examination (on entrance and annual)
- (2) Rest rooms
- (3) Washing and bathing facilities
- (4) Home nursing
- (5) Lunch rooms

(b) Curative

- (1) Dispensaries and hospitals
- (2) Special clinics (optical, dental)
- (3) Tuberculosis care

2. Savings and Insurance

(a) Loans

- (1) Remedial
- (2) Building

(b) Insurance

- (1) Sickness
- (2) Life
- (3) Old age

(c) Profit-sharing

(d) Savings plans

3. Recreational Activities

(a) Clubs and associations

(b) Entertainments, concerts, etc.

4. Education of Workers

(a) Training for jobs

(b) Training in jobs

(c) Training in citizenship

(d) Promotion and records

5. Care Outside Working Hours

(a) Housing

(b) Recreation

(c) Care of families

As will be seen from the synopsis of welfare activities

¹ American Academy of Political and Social Science, *Annals*, 1916.

given above, the work is varied, its nature in any particular case depending upon the special needs of the workers, or perhaps upon some whim of the employer. No one employer, of course, attempts to put into practice all of the plans outlined above.

The prevailing interest, says Dr. Fleisher, seems to be medical care; this is, at any rate, the usual starting-point when welfare work is undertaken.

Much of the maintenance work, begun by the employer, is continued by the employees, with or without financial assistance from the management. It seems that, especially in the case of the social or recreational activities, but also in the case of the building up of employees' benefit funds, the management of the work as well as the financing of it should be left to the employees themselves, the employer making a minor contribution, and perhaps guaranteeing the payment of any deficit that might be incurred. Nothing, however, that savors of paternalism will be tolerated, much less of a paternalism that would pay for maintenance work by reducing wages.

Management of employees' benefit associations.—Of the cases in which data are obtainable, 75 per cent of the employees' benefit associations are managed by employees alone; 18 per cent jointly; and 8 per cent by the employer alone. In 72 per cent of the associations having managing boards, all the members are employees; in 10 per cent the management is represented on the boards; in 8.3 per cent representation of one or the other is optional; in 2.3 per cent the boards are composed of establishment officials alone.¹

¹ *Industrial Management*, January, 1918.

Group insurance.—One of the most successful forms of maintenance work is the protection of employees by means of group insurance, which provides against financial hardships resulting from accident, sickness and old age. Not only is the employee himself protected, but so also are his dependents.

Group insurance is taken out by the employer under a "blanket policy"—only one policy being issued to a group, the policy usually being without conditions other than the payment of the premium.¹

In a register which accompanies the policy, the names of the individuals covered by the policy are recorded, the amount for which each is insured, the names of the beneficiaries, the amount of the individual premium, and other essential data.

Individual certificates are issued to each individual covered by the policy. These certificates recite the conditions under which the policy remains effective—these conditions being, in the main, that the employer continue to pay the required premium and that the employee remain in his service. Upon the death or lesser misfortune of an employee insured, the check in payment is made out to the order of the beneficiary, but is sent to the office of the company for delivery. The fact that payment is thus made through the company tends to strengthen in the beneficiary's mind the favorable association between the payment and the employer whose foresight provided it.

Profit-sharing.—Profit-sharing is the distribution to employees of a certain portion of the profits of a busi-

¹ American Academy of Political and Social Science, *Annals*, 1917.

ness, in addition to their regular wages. In order that a plan may properly be designated as a profit-sharing plan, it is requisite that the payments be predetermined as a percentage of the profits of the business, contingent upon their being made, and the time of the calculation and distribution of the profit must be specified.

It is commonly held that profits so to be distributed do not form part of the employee's wages, but it is difficult to see how the distinction can be made. It is true that the profit-sharing feature may be, or rather must be, independent of the regular wage-system, except in that the regular wage may be one of the bases of calculation in the apportionment of the profits to employees, yet the fact cannot be ignored that wages, from the workman's point of view, are what the laborer is willing to work for, and, from the employer's point of view, what the employer must pay in order to obtain the most profitable service. If the employee works in the hope of receiving a share of the profits, this expectation and this share of the profits must be classed as part of his wages. After workmen have become accustomed to profit distributions, they look upon them as a deferred portion of their wages.

We are concerned only incidentally, however, with the question of whether or not profit-sharing is a form of wage payment; we are interested in its purpose, its methods of operation, and its results.

The purpose of profit-sharing.—It seems clear that profit-sharing, while it may sometimes be prompted by a sense of justice toward employees, is instituted by employers primarily as a means of reducing labor turnover. A share in the profits is given, in addition to regular

wages; this in itself tends to attract and hold the workman. If, however, the distribution of profit were prompted alone by a sense of justice, the useful workman should have his share even although he had worked only a short time. The custom is, however, to permit only those employees to share in the profits who have a record of at least a year's continuous service. If a workman should join in a strike his continuity of service would be broken and he would forfeit his accumulated profits. Again, the increase given in proportion to length of service beyond the one-year minimum is to be explained only upon the ground of the saving the steady workman has effected in holding down the turnover in his particular occupation. This is not an inconsiderable service, for if it costs, as we have seen, possibly \$100 or more to replace a workman, the one who stays and saves his employer that expense once or twice a year might well be rewarded with a payment in addition to his regular wages. Incidentally, of course, profit-sharing may promote a spirit of co-operation among the employees which leads to increased production as well as to a better care of tools and materials.

Forms of profit-sharing.—Profit-sharing proper is the distribution to employees of a predetermined percentage of whatever general profits are shown to have been made by a business at the end of its fiscal year or other period of computation. For the purpose of profit-distribution, the employees are usually divided into classes on a basis of length of service, the larger shares going to those who have been longest in the company's service. Within each class, the amount received by the employee

is in proportion to the amount of his annual wages or salary. This form is called "general profit-sharing." Other forms of profit-sharing are "individual profit-sharing" and "unit profit-sharing." Individual profit-sharing is that form under which an employee receives a pre-determined percentage of the profit resulting from his own efforts, as when a salesman receives a share of the profits made upon the orders which he secures. This form of profit-sharing, of course, is to be distinguished from the payment of a commission based on the selling price. Unit profit-sharing is the distribution to employees within a certain department or branch establishment of a given percentage of the profits made therein.

Profit-sharing, of course, must be distinguished from gain-sharing¹ and ownership-sharing (stock-holding by employees) as well as from the distribution of bonuses or gifts—payments made at the discretion of the management and not pre-determined as a percentage of profits.

In a few instances, loss-sharing has been instituted along with profit-sharing, an amount—sometimes 10 per cent—of the wages being held back as a margin to cover a portion of a possible loss during the year, and to be returned, along with the agreed-upon percentage of the profit, if a profit should be made. In actual practice this plan has meant little more than an enforced saving, and a development of a common viewpoint of men and management, for in the cases where it can be instituted there is little, if any, risk of loss. Employees usually are willing to take the risk of loss only if the risk does not appear

¹ Gain-sharing is a wage increase based upon the efficiency of the employee. Gain-sharing plans are described in the chapter on "Wage Systems."

to be a real one—or, in other words, if there is no risk.

A typical profit-sharing plan.—A modern profit-sharing plan (adopted by an English engineering company in 1916) provides as follows:

1. "Company shareholders receive 8 per cent dividends before any profit is distributed to employees.

2. Cash dividends above 8 per cent are divided between (1) shareholders, on the basis of their stock interests, and (2) employees, on the basis of their salary or wages received during the twelve months ending June 30, as follows:

Class A—Two-year employees, same rate as to stockholders.

Class B—One-year employees, three-fourths of the above rate.

Class C—One-half of the above rate. (Rule automatically excludes employees of less than six months). Dividends, accrued to June 30, are to be paid in December.

3. Only bona fide employees at time of distribution (December) are eligible, except employees laid off on account of (1) lack of work or (2) sickness.

4. Other ex-employees have forfeited right of participation.

5. Employees receiving a commission from the company, or any other share in profits except dividends on stock, are ineligible.

6. All employees except those excluded as above are eligible.

7. Plan is voluntary; not a contract; may be changed by directors at any time; any employee may be discharged

at any time; employees may not hold the company to an accounting."

In other plans, an annual bonus may be paid on a basis of salary and length of service, ranging from perhaps 2 per cent of the annual salary, in the case of employees in service from one to two years, up to 20 per cent to those who have been in service ten years. Service in some cases must have been continuous; in other cases the aggregate of all previous service-periods is considered.

Effectiveness of profit-sharing plans.—Profit-sharing, like other forms of welfare work, is effective or, in other words, promotes the co-operative spirit among the workmen and reduces labor turnover, only when instituted by the management in a spirit of fair play. It is certainly far less efficient than a scientific wage-system in stimulating performance. A modern wage-system, such as that in use in the Franklin shops,¹ rewards continuity of service as well as efficiency in production. Profit-sharing, however, is applicable in cases where individual performance cannot be measured, as in certain departments of the Procter and Gamble soap factories, for example, and amid such circumstances would seem to have its proper place.

One danger attending the operation of a profit-sharing scheme is that if the distribution is large enough to be of interest, the workmen will resent additions to their number, since this would decrease the share of each individual. The working force may then be too small for the greatest efficiency and the men may be overworked.

¹ See page 303.

The question of whether a workman, when he works for wages, is paid for continuity of service—at any rate, up to a certain point—as well as for his daily labor, or whether length of service is something outside of the bargain, to be paid for by an addition to the regular wages, is of little practical importance at present. In the present stage of the ethical development of business, the question is not that of what wage a man is entitled to, but that of the wage in return for which he will render the most economical service. If profit-sharing can establish itself as a detached and tangible reward proportionate to the saving due to continuity and length of service, it would seem to be upon a firm basis. If, however, this same end can be attained by an adjustment of the wage equation (see “Wages”), this latter means would seem to be preferable. In so far as profit-sharing is a means of returning to the employee what is his due, as a matter of fundamental justice, it can result only in competing with and raising wages generally, for wages, like water, must seek their own level, and it does not follow, by any means, if money wages were so raised, that real wages would also be increased.

Ownership-sharing.—Ownership-sharing, sometimes called co-partnership, is a system under which, with the primary object, apparently, of lengthening the term of service, the employer, instead of sharing cash profits, pays them in the form of stock, or permits or encourages the employees to acquire stock in the company by purchase. Many variations will be found in the methods by which the transfer of stock to employees may be given; employees may be given the opportunity to purchase stock

upon very favorable terms—only, however, after a specified term of service. Unwise and unfair restrictions are frequently put upon the ownership of stock by employees. Such provisions may be found as that the employee forfeits his stock when he severs his connection with the company; or he may be restrained from selling it, or in case of his death dividends may be paid to his wife or other beneficiary until the death of the beneficiary, upon which event the stock reverts to the company. Sometimes, but rarely, the employee may become the outright owner of the shares.

As indicating a tendency toward democratization, the holders of employees' stock may be granted the privilege of electing one director who, being in a hopeless minority, has but little power. Nevertheless, there may be an advantage in that the director may gain and communicate to the workmen somewhat of the employer's point of view, and vice versa.

The stock-owning bonus plan of the General Motors Corporation, described in the following section, is an interesting example of ownership-sharing.

Stock-owning bonus plan of General Motors.¹—“The General Motors Corporation, with the consent of its stockholders, has put into operation a bonus plan which will give employees an increasing interest in the business through the distribution of stock among them. The corporation had this plan in mind last week when the shareholders authorized an expansion from \$100,000,000 to \$200,000,000 in the authorized common stock, and from \$50,000,000 to \$100,000,000 in the preferred.

¹ *New York Times*, September 1, 1918.

"The management engages to establish a fund to which will be credited yearly an amount equal to 10 per cent of the net earnings after deducting 6 per cent on the capital employed in the business, the purpose being to buy stock with the money. At the end of the year, beginning December 31 next, lists of employees entitled to a bonus will be prepared in accordance with this schedule:

"Senior bonus list, to be selected from salaried workers receiving \$2,400 and upward a year, who will be divided into five divisions, according to merit. Employees in the first division will receive a considerably larger percentage of their salaries as bonuses than those in the fifth.

"Junior bonus list, to be selected from all employees receiving less than \$2,400 a year. Except with the approval of the President, no worker will be placed on either of these two lists unless he has been in the employ of the corporation for at least one year.

"Royalty bonus list, comprising employees who are rewarded for inventions, suggestions, ideas, or improvements of special value to the corporation. Each case is to be determined on its merits, and rewards are to be made irrespective of the earnings of the corporation or the length of service of the employee, the criterion being the benefit realized by the use of the invention or improvement.

"The distributions will be made in March of each year by the Finance Committee. Any undistributed balance in the bonus fund is to be carried forward from year to year."

Housing.—Housing is a form of welfare work in which the employer seeks not only to provide living con-

ditions which will raise the general efficiency of his working force, keep at least a part of the force where they are in easy reach both for ordinary work and for emergencies, but which also will enable him to create what we may call physical and social ties from which the worker could extricate himself only with difficulty—the primary purpose of housing being to reduce labor turnover.

The housing problem is as old as the factory system. The location of a factory or similar industry is often determined by natural conditions, such as existence of a water-power site, or a coal deposit. Workmen must be secured, so it becomes necessary, especially in a sparsely populated territory, to build a number of dwellings or even a town, complete, with its light, water and drainage systems, schools, and system of government. The United States Steel Corporation, for example, has built several towns; various towns have been built also somewhat as social experiments, for the business man of the larger type has an insatiable curiosity and a distinct tendency to take up hobbies.

The Department of Labor in 1917 made an investigation of housing conditions in the United States. A summary of the report was published as a bulletin in November, 1917.¹

The Bureau, before beginning this investigation, obtained a list of over 700 employers who have endeavored to house their men; it is estimated that if the list had been complete, it would have contained fully 1,000 names.

¹ *Employer's Housing in the United States*, by Leifur Magnusson. Summary of a forthcoming report of the United States Bureau of Labor Statistics in the United States.

Of these 700 firms or companies, 213 were studied; these controlled 423 establishments or plants, employing 466,991 men, of whom 160,645, or 34 per cent, were accommodated in company houses, exclusive of boarding houses. Data are for the year 1916. The investigation was therefore not comprehensive, but was representative.

Some of the outstanding facts brought out in the study are as follows:

Town-planning has had little consideration, technical town-planners having been consulted in only 15 per cent of the cases. This idea is of recent origin and is used more by manufacturing companies than by mining companies. Model towns, with few exceptions, are of recent construction.

Public utilities are provided and governmental functions exercised by companies themselves in the great majority of cases.

The chief characteristic noticeable in every company town is uniformity—same type of buildings and same rectangular survey.

Two-thirds of the houses have four to six rooms. Sixty-nine per cent rent for less than \$8 a month. Cost ranges from \$600 to \$1,500, average about \$750.

Maintenance is the most important problem. One-third of the companies encourage gardening, which necessitates fencing; it is better for the company to build fences than to leave that task to the tenants, for they will use unsightly material—old boards, boxes, corrugated iron and waste wire. Good fences add much to the appearance of the town.

Repairs are often taken care of by the regular com-

pany repair department, but sometimes a special or separate repair department is maintained.

As to the housing investment, the work is usually conducted as part of the company's business, from the general office.

Of 213 cases, only 13 reported the practice of constructing and selling houses to workmen. One Ohio concern (manufacturing) which encourages ownership of the house by the workman sells the property on an easy payment at "real estate value," a price about 25 per cent above original cost, but when the workman has kept up his payments for five years and is still in the employ of the company the difference is returned to him and subsequent payments are made upon the basis of actual cost. Other establishments sell lots to employees and in each case require the erection of a house within a year.

Cost of housing.—Conditions are, of course, variable, but 60 companies report their cost of housing, not including cost of land, as \$15,948,502. This is 28 per cent of the average annual payroll of these companies, for the period 1911-1915. These houses accommodated 42 per cent of their employees. If the figures were correct for present conditions, an employer wishing to house half of his employees would expect the cost to be one-third of the annual payroll. In other words, the investment required, exclusive of land, for housing the average employee, amounts to two-thirds of the employee's annual wage.

Returns on the investment vary from 6.2 per cent, in the case of steel companies in Ohio and Pennsylvania, to 20 per cent in the case of Alabama Mining Companies.

Reasons for undertaking industrial housing.—

Among the reasons given by employers for their undertaking to house their employees, the following are given as representative: "It pays as a business proposition;" "stockholders were interested in the real estate company which built the houses;" "property bought for plant extension (housing incidental);" "feeling that employer owes something to the men;" "as an experiment;" "to prove out factory village plan as a new theory;" "to promote the general welfare of mankind;" "to obtain a supply of foreign labor."

Results of housing activities.—The results reported, arranged in the order of their frequency, are as follows:

1. Secures better class of workmen.
2. Greater stability in supply of labor.
3. Reduction in number of floaters.
4. Better living conditions.
5. Greater loyalty of employees.
6. More contented and
7. More efficient workmen.
8. Better control of labor situation—that is, hiring and discharging may be done with greater freedom.
9. Attracts married men.
10. Greater regularity of employment.
11. Better house for less money for workman.
12. Brings profit to the company.
13. Facilitates part time.
14. Serves to advertise company and keep it favorably before the public.

All of the foregoing results, if they are actually secured, are of the greatest practical value, and it would seem that

if housing secures these results the question, in cases where conditions are suitable, would be not whether or not to house employees, but the selection of the best plan.

Reviewing the history of housing conditions in the United States,¹ Mr. John Ihlder, Secretary of the Philadelphia Housing Commission, concludes that better conditions must be provided—but that how, is far from settled. We are faced with the fact, he observes, that a *laissez faire* policy is, in the long run, unworkable, and we have also the experience that paternalism is not workable. This is important because the first instinct of those who have power, when inspired to use that power for the benefit of others, is to use it paternalistically.

"Employers agree," says Mr. Ihlder, "that housing reduces strikes and labor turnover. That is the business end of it. Whether it lessens sickness, they do not know—have not thought much about it. That it makes men more contented, they believe."

It is asserted by practically all employers reporting on the subject that the demand for houses far outruns the supply. This would indicate that the housing plan appeals to the workman as well as to the employer. As a means of reducing labor turnover, then, the housing of workmen is satisfactory to both employer and employee, the various problems which a housing undertaking inevitably creates ought eventually to be solved—such practical problems as those of crowding, or of sanitation, as well the less definite but quite important question of social responsibility. The essence of the social problem is:

¹ American Academy of Political and Social Science, *Annals*, 1917.

how to control men without taking away their freedom, and it is not the simplest problem in the world.

Why maintenance work in general has been undertaken.—Reasons that have been given by employers in explanation of their interest in maintenance work have been tabulated as follows—the list being, of course, far from complete:

1. "Pride in plant."
2. "Personal interest in employees."
3. "Social vision—recognition of the fact that it is the employee's present labor which is exchanged for wages—not his future earning power."
4. "Loyalty and co-operation of employees secured."
5. "Competition for workers in labor scarcity."
6. "Offset to union activities—threat may be made to withdraw benefits."
7. "Public opinion obtained in support of company, especially in the case of public-service corporations."

The present status of maintenance work.—The conclusions of Dr. Fleisher, quoted above, as to these points are, briefly, as follows: That maintenance work has undoubtedly gratified pride and has developed social vision, but that industry seeks more tangible results, in the form of lowered production costs. The results are difficult, however, of determination and analysis. The pioneers of maintenance work have faith in it, and claim that it justifies its cost by stabilizing the labor force. So far, however, maintenance work has not been of sufficient extent to influence the community appreciably, except in isolated instances. It has a community value, however, in the fact that it sets higher standards for industry and raises

the minimum set by law. The work is still too new to have been perfected by any one organization, and before it can be regarded as being an important factor in American industry, it must be widely extended—not in all its forms, but in those which prove most profitable. In order that the work may be so extended, two developments are essential:

1. Analysis of results, so that it can be demonstrated that maintenance work pays.

2. Democratization of activities, in order to overcome hostility and criticism of the workers.

"Welfare work," says Dr. Fleisher, "has passed its first stage—that of experiment. The second stage—that of interpretation and evolution—is now reached. The future depends upon whether careful scrutiny will prove its value; if it does, welfare work will be correlated to successful management and will enter upon its third stage—that of extension and expansion."

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PURCHASING

The purchasing agent's place in the business organization.—The importance of the purchasing agent and his opportunities for service to the business organization are only beginning to be recognized. The duties of the purchasing agent's office call for abilities of the very highest order—of an order so high that several duties which logically pertain to the office of the purchasing agent have been assumed by the general manager and the heads of various departments. This is for the reason that, generally speaking, the purchasing agent has not realized the possibilities of his position and has not capitalized his assets. It rests with the purchasing agent himself whether he shall be merely a “rubber stamp” or whether he shall raise his office to a dignity and importance second only to that of the office of the general manager.

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The scope of the purchasing agent's authority.—Neither the purchasing agent nor any other official under the general manager, of course, can have an independent power in the organization, else the essential unity of command would be destroyed. The purchasing agent's duties should be executive with respect to the exercise of his special function—purchasing—but advisory with respect to the formation of the policies and plans of the business. In the business organization, however, recom-

mendations have the practical force of decisions in a degree corresponding to the degree of knowledge and sound judgment possessed by the person who makes the recommendation.

The purchasing agent should rank with the sales manager.—Let us compare, for example, the position of the purchasing agent with that of the sales manager. The business enterprise stands midway between supply and demand. The sales manager correlates the organization with demand, the purchasing agent correlates it with supply. Each of these functions is of vital importance and should be regarded as being of equal rank.

The sales manager is like a horse groomed for the race. He carries with him the hopes and fortunes of the organization. There is little knowledge or skill, however, which the sales manager is expected to possess which is not or should not be possessed in equal or even greater degree by the purchasing agent.

The sales manager must know the products of the house, and know them thoroughly. The purchasing agent does not have to go out of his way to get this information, as does the sales manager. He has purchased every item of material that has entered into the product, and usually knows the product as the salesman seldom can know it.

The sales manager must be a student of business conditions and market movements. Not less must the purchasing agent. The salesman must analyze and interpret the records of the business. So must the purchasing agent. The sales manager must be a psychologist, not only by training but by intuition, knowing how by the

use of argument and suggestion and the whole force of his psychic being to clash with the will of his opponent and overcome it. His antagonist in such an encounter is more than likely to be the purchasing agent of some other business organization, and in all these things this purchasing agent must match him—if he is a purchasing agent and not a “rubber stamp.”

Opportunities open to the purchasing agent.—Without belittling in any way the office of the salesman or the sales manager, there are many opportunities for service and consequently for place and power open to the purchasing agent which are not open to the sales manager. We do not maintain that the purchasing agent of the typical business organization has recognized and taken advantage of these opportunities. The functions which properly belong to the purchasing agent, as noted above, have been delegated to various heads of departments, leaving the purchasing agent circumscribed in authority and range of activity. The hope of the purchasing agent lies in his fitting himself to assume his proper functions and in demonstrating that they are rightfully his. What these functions are we shall indicate briefly in the following pages.

Ability and opportunity to acquire knowledge and to use it is the “secret” of power.—The importance of the position which any official holds in a business organization depends upon his opportunities for acquiring knowledge valuable to the business, his opportunities for applying that knowledge to the actual operation of the business, and the use which he personally makes of these opportunities. If the truth of this premise be granted,

let us see what the opportunities are which are open to the purchasing agent.

The purchasing agent learns the methods and processes of other business.—In the first place, there is no official connected with the business organization who has a better chance than has the purchasing agent to learn of the “inside workings” of other business enterprises—especially of their production departments. In the case of each item of material or supplies bought by the purchasing agent, he is expected to familiarize himself with all the essential processes of its manufacture. The merits of the various processes employed by rival establishments are explained to and impressed upon the purchasing agent by the salesmen of the competing houses. He himself inspects the plants of the vendors with whom he makes important contracts and employs production specialists to analyze their facilities and report upon the effectiveness of their methods. He gets the *detail* of the various processes. He is in a position, therefore, to judge of the relative advantages of the various processes or methods of manufacture and should be in a position to influence the methods of his own establishment in so far as the knowledge he gains is relevant and applicable. Obviously, the purchasing agent who makes use of the opportunity touched upon above should occupy a place in the highest councils of the production department.

The purchasing agent becomes a market analyst, concerned with both supply and demand.—Taking at random another illustration, the course of the business enterprise is determined by the interaction of demand and

supply as this interaction is interpreted by those in control of the enterprise. Now the sales manager, who is admittedly one of the "powers that be," is concerned, in the exercise of his function of selling, chiefly with demand, which is only one of the factors. He is interested in supply as well, but he has to go out of his way, so to speak, to get the information he needs concerning supply. The purchasing agent, however, in the course of his regular duties, has a knowledge of both demand and supply absolutely forced upon him. He must be as keen a market analyst as the sales manager himself, not only from the selling point of view but from the buying point of view. If he takes advantage of the opportunity he has to interpret the interaction of supply and demand as reflected in the trend of prices and business conditions generally, he should have as much influence as any other official under the general manager, in the determination of the larger policies of the business.

The purchasing agent deals with many products and in many markets.—Again, there is no other official in the organization who has the opportunity to observe business conditions from so many angles—for the reason that the other officials—those of the sales department, for example, who also come in direct contact with the outside business world—are concerned directly with only the relatively few classes of products which they sell. The purchasing agent, however, is directly concerned with the many lines that enter into each article produced for sale. Where the salesman sells an automobile, for example, he sells a single article—an automobile. The purchasing agent as against the salesman's one article,

deals with a hundred articles or classes of material—wood, steel, copper, tin, rubber, leather, cotton, wool and innumerable other materials and parts. With respect to each article or material purchased he must know the trend of prices and the stocks in the hands of dealers. He must know offhand the condition of the steel companies in regard to their unfilled orders; he should know whether or not it has rained since yesterday in the cotton belt; and what the outlook is for shipments of rubber from South America. If he has this knowledge, and other knowledge of a similar nature, he might well be looked to for guidance in the determination of the manufacturing and marketing policies of the business.

Opportunities of the purchasing agent to introduce cheaper and more serviceable materials.—It is not only in the formation of general policies that the purchasing agent can render a direct service to the organization, in addition to the service he renders in the actual purchasing of materials and supplies. The saving which he may effect by purchasing efficiently may be taken for granted—of this we shall have something to say later in the chapter. Many opportunities exist, however, for the discovery by the purchasing agent of cheaper or more serviceable materials or supplies for use in the manufacturing and other departments. The adoption of certain materials of certain specifications for regular use in certain processes is called standardization. Standardization is accomplished by the adoption of the specifications recommended by the engineering or other experimental departments, in view of various market and other considerations apparent to the management. Information

as to market conditions—of the sources of supply—is essential in intelligent standardization. The information of this nature contributed by an alert purchasing agent is of inestimable value. This point, however, must also be considered: The engineering department, we may assume, has for its primary object the combination of the elements which enter into a product which will give the ideal result, regardless of price—that is, price is not a primary consideration in the minds of the engineers or chemists. But the purchasing agent is directly and actively concerned with price. With his wide range of observation and his knowledge of many things which will escape the specialists of the laboratory, he should co-operate continually with these specialists in a search for cheaper but equally satisfactory products or grades of material which can be used in place of the more expensive. The purchasing agent is actually able to accomplish much along this line, for the reason that being admittedly an authority on sources of supply and admittedly familiar with everyday practice both in his own establishment and in many other establishments, he is not looked upon as an amateur, but is given the right to suggest improvements—a right which is properly withheld from those who have not mastered the methods previously in use. The purchasing agent, accordingly, has the unique opportunity of introducing improvements in materials and processes—subject, of course, to the approval of the department authority—and to the extent to which he avails himself of this opportunity he will benefit the business and establish himself in a higher as well as more lucrative position.

The purchasing agent's service to the country, in the conservation of resources.—In these days, moreover, of shortage of essential goods, the purchasing agent can perform a public service by conserving the articles in which the most serious shortage exists, by using substitutes for these wherever possible, by refusing to hoard material that the country at large is in need of and in many other ways. Further than this, he can increase the industrial capacity of the country by promoting better business methods and by striving to standardize the best methods in the practice of the business community.

His work in the standardization of contracts and terms of sale should go far toward eliminating the lack of uniformity that has hitherto obtained. In the furthering of the adoption of uniform practice with respect to credit matters, particularly with respect to the trade acceptance, his efforts are the logical complement of the efforts of the credit men of the country in the same direction—the one represents the seller—the other, the buyer.

Unfortunately, in too many instances the purchasing agent has had little or no incentive to concern himself with the management functions of the business enterprise. Before the European War, when the purchasing department came into existence as a subdivision of the accounting department, it was generally assumed that almost anyone could purchase—that the only important part of business was selling! The curtailed supplies resulting from the prior claims of the war gave a new importance to the purchasing agent. Selling remains important, but for the same reason purchasing needs expert attention. It is certain, however, that buying will con-

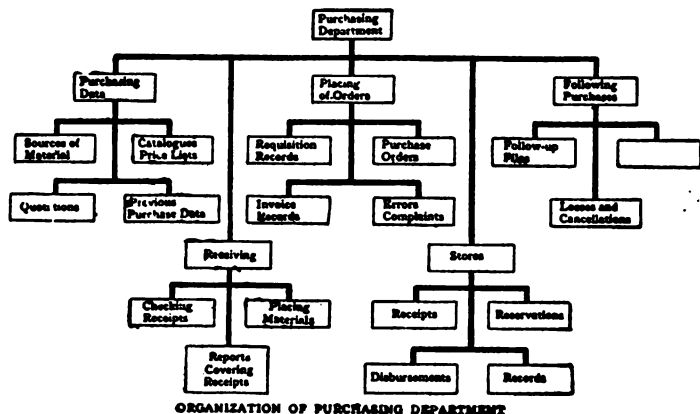
tinue to increase in its recognized importance. If there are many sellers again, and many products to choose from, it will be recognized that buying is not thereby made easier, but in reality more difficult, offering more opportunities for the exercise of the buyer's fullest powers.

In the following outline of present-day business practice in the operation of a purchasing department, the position of the purchasing agent as therein set forth is far from that which the importance of his position demands and far from that which it is likely to be in the future—when the purchasing agent will have become aware of his opportunities and will have taken advantage of them. If the purchasing agent would occupy, as he may, one of the very highest places in the business organization—in other words, if he would capitalize his assets—let him begin by classifying and organizing the data he secures in the course of his everyday duties, with a view to putting this knowledge into actual use in the organization.

The purchasing department.—The chart shown herewith indicates the duties the performance of which comes under the supervision of the purchasing agent.

The purchasing department is a subdivision of the production department, and is co-ordinate with, not subsidiary to, the manufacturing department. It is true that in some respects the purchasing department is under control of the works manager. The purchasing agent buys upon requisitions and specifications made out by the manufacturing department, but he is accountable not to the works manager, but to the comptroller or to the vice-president in charge of production.

The specific duties of the purchasing agent, as head of his department, are to assemble purchasing data, to place orders for supplies as they are requisitioned, and to secure delivery within the time specified upon the purchase requisitions.



DETAILED ORGANIZATION OF THE PURCHASING DEPARTMENT
(From Knoeppel's *Organization and Management*)

Analysis of purchase requirements.—At intervals during the year, purchase requirements will be analyzed and a buying program drawn up. In the analysis of purchase requirements the sales department plays a very important part—furnishing much of the data by which the character and amount of the goods to be purchased will be determined. The recommendations of the sales department will be modified by the recommendations of the purchasing agent, since it is from him that information must be obtained as to the materials and supplies which can be obtained and as to the probable cost of these materials and supplies. In the chapters on “Selling” will be

found an outline of the procedure in market analysis. The records supplied by the accounting department will also be taken into consideration, just as they are taken into consideration in mapping out the selling program.

Standardization of purchases.—When the classes of materials and supplies and the quantities of each class are decided upon, maximum and minimum limits will be fixed, wherever possible. Since the purchasing agent is required to provide the articles to be purchased at the time when they are needed, it is argued that the purchasing agent should fix the maximum and minimum amounts to be kept in stock—his knowledge of market conditions fitting him for this duty. The planning department, however, usually fixes the limits held to be advisable, since the planning department has the best facilities for forecasting the need for each class of goods.

Standardization includes not only the fixing of the class and of the quantity, but also of the exact quality to be incorporated in the supplies purchased. Chemical and physical laboratories are maintained for experimental work and for testing the materials purchased, in order to determine whether or not they conform to the standards which have been fixed. As noted above, the purchasing agent should keep in close touch with the laboratory experts and obtain their help in the discovery or adaptation of materials the use of which will effect a saving in cost.

Some of the large corporations of the country maintain laboratories at a cost of as much as a million dollars a year. Smaller concerns sometimes co-operate in the upkeep of a joint laboratory.

Schedules of delivery.—In a well-systematized estab-

ishment the delivery schedules may call for delivery from time to time of certain goods not only upon the days specified but at certain hours, and at specified warehouse or shop doors. Where the requirements can be predetermined so accurately as to make such a delivery schedule possible, a considerable saving may be effected with respect to investment in stock as well as in the cost of storing and rehandling the goods. It is unsafe, of course, to institute such close delivery schedules except in dealings with vendors of unquestionable responsibility.

Where materials under such a delivery schedule are delivered directly to the shops or the "jobs" in which they are to be used, they do not pass through the perpetual inventory records of the stores department but are charged immediately to the "work in process" or other similar account. From the accounting standpoint this is an objection to the system referred to, but this disadvantage may be more than offset by the saving in storage and handling.

The sources of supply.—One of the most important duties of the purchasing agent is the keeping of a list of "vendors and their wares."

Such a list is compiled from data gathered from many sources. The sources may include: Advertisements; catalogues and circulars received; articles in trade journals; manufacturers' directories; telephone directories; membership lists of trade associations, and other sources of a like nature. The purchasing agent will add to his list, of course, the names of all who answer his advertisements for bids and other advertisements, as well as the names of those whom he may meet at conventions

and elsewhere, and will also get useful information from salesmen and others who are in touch with the markets.

It is well for the purchasing agent to keep as closely in touch with vendors as is reasonably possible, whether or not any purchases are made from them. Quotations should be asked for, and the vendor reminded that his name is on the purchasing agent's list. A courteous reply should be made to every letter, and it should be remembered that where personal interviews do not take place, the impression made by the house is no more than that conveyed by the letter. No detail is so small that it may be disregarded. The letterhead, the quality of the paper, the style, the typing, the legibility of the signature, all will be noted by the reader. An unfavorable impression created by any of these will be difficult to eradicate.

The mere possession of a list of vendors and their wares would be insufficient for the purposes of the purchasing agent. He must know as much as possible about the various manufacturers and dealers—where their distributing stations are located, the freight rates and shipping facilities, the capacity of their plants, the amount of goods they keep in stock, the quality of the goods, the quotations that may be expected, and the reputation of the house. Careful records will be kept of dealings with vendors, so that reference can be made to prices and service obtained from each in the past. Especially when large orders are to be given, the purchasing agent will assure himself of the competence of the vendor to make delivery. If he is not thoroughly satisfied as to the ability of the vendor to comply with his contract he may visit the vendor's plant in order to make a personal esti-

mate of its capacity, or he may employ a firm of production engineers to make a report upon the matter.

A supply of goods or material is fundamental in the operation of any business establishment, whether manufacturing or mercantile, and no chances must be taken of a failure of the supply. A shortage, of course, will tie up the plant. An excess over requirements will cause needless investment and storage costs. It is necessary, therefore, to estimate the requirements carefully and to let contracts only to vendors who are able to comply in detail with the terms of the contract. Delivery is usually more important than price.

Purchase requisitions.—The purchase requisition is the order to purchase, delivered by the stores department or by a designated authority in the manufacturing or other department. The purchasing agent must be given a list of all the officials who have authority to make out purchase requisitions, and, of course, must purchase only upon requisitions signed by a designated authority, in order that the buying program may not be disarranged. In each case, moreover, the class of goods which the various officials have the right to requisition must be specified. In like manner the quantities within given periods which each official or department may requisition may be limited, and limitations may be put also upon the grade or quality of the goods ordered. This latter point should be taken care of by standardization, as explained above.

With respect to certain classes of goods, the purchasing agent may be required to advertise for bids; in other cases he may buy under the bargaining system.

It is often required that purchase requisitions be made only on standard forms. A typical form is shown herewith. (Description column disproportionately reduced.)

| Purchase Requisition | | | | | | | No. |
|---|----------------|-----------|----------|-------------|-------------|--------------|--------------------|
| To | | | | | | JOL | |
| (Purchasing Agent) | | | | | | | |
| Please order the following articles: | | | | | | | |
| | For the use of | | Quantity | Description | Date Wanted | Date Ordered | Purchase Order No. |
| | Dept. | Order No. | | | | | |
| | | | | | | | |
| | | | | | | | |
| Approved (Supt. or other authority) Signed (Store Clerk or Supt.) | | | | | | | |

PURCHASE REQUISITION

The purchase requisition, as will be observed, should show, as essential data, its number; the date; the article and its specifications; the quantity; the time within which delivery must be made; the signature of the person making the requisition and the signature of the official by whom the requisition is approved.

The limits of authority as between the various departments must be clearly defined. In general, the planning department, which makes out the purchase requisitions, is held responsible for the correctness of the orders to purchase, while the purchasing department is held responsible for delivery. The purchasing agent must keep the planning or manufacturing department informed as

to outside conditions and must specify the time, with respect to each article, which will be required for delivery. If the requisition made out by the planning department specifies a time shorter than that which has been designated by the purchasing agent, the blame of a late delivery falls, of course, upon the planning department. Where purchases are standardized, with maximum and minimum amounts to be kept in stock, the purchase requisition is usually made out by the stores clerk and approved by the superintendent or other authorized official of the department which will use the goods in question.

Purchasing methods.—The first object in purchasing is to secure the goods needed, at the time when they are needed. The second object is to secure them at the lowest price or upon the most favorable terms. It may be noted here, that the purchasing agent makes his purchases on a basis of the utility of the goods and not merely by weight or quantity. Coal, for example, may be purchased by calories instead of by tons, and gas on the basis of British Thermal Units instead of merely cubic feet. The practical importance of the distinction between utility and mere quantity may be appreciated by anyone who has noticed how little light could be had during the time of the war, when toluol was washed out of the gas for munitions purposes, leaving the gas reduced in lighting value by some 20 per cent, while the consumer still paid the same price per cubic foot.

Within reasonable limits, at any rate, insisting upon the lowest price has a sound justification from the economic standpoint. While at first thought it might seem that it should make little or no difference to society

whether the one or the other of the parties to the transaction obtained the advantage, it must be noted that when goods are bought consistently at the lowest possible price which leaves the seller a reasonable profit, the incapable or unfavorably situated dealers are forced out of business, leaving production in the hands of those who are able to carry on its processes with the least amount of waste. Reducing the dealer's margin of profit, moreover, forces him continually to devise and put into practice improved methods, resulting obviously in a general economic gain.

In general, there are two methods or systems of purchasing: (1) the bargaining method, (2) and the competitive system—in which bids are advertised for and the order given to the lowest bidder or to the one whose goods and service, in connection with his price, are considered the best.

Buying by specifications.—In either of these systems purchases may and should be made "on specification," the specifications being the detailed description of the goods required. Certain classes of goods will usually be bought on the seller's specifications, the seller giving the buyer a complete description of the goods and guaranteeing them to conform to the specifications.

It is probable that most of the goods purchased by a merchandising establishment are bought on seller's specifications. A manufacturing establishment, however, will usually draw up its own specifications, to which the seller must make his product conform. It may be noted that buyer's specifications, from one side of the contract, are seller's specifications, from the opposite point of view.

The specifications, obviously, should cover all essential points, but beyond the essential points a too minute and rigid set of specifications involves, as a rule, an extra cost of production and also eliminates various sources of supply. Demand remaining the same and supply being decreased, a higher price inevitably results. The buyer must decide at what point further detail in the specifications ceases to increase the value of the product sufficiently to offset the increase in price.

Standard specifications.—Where goods or materials are used in large quantities it is advisable to standardize the specifications and to standardize the materials or supplies used throughout the establishment. Care should be used to create no unnecessary classifications. Goods may then be purchased in larger quantities, at lower prices. There will be a saving also in the cost of handling, and in the case of machinery or other equipment, in the cost or repairs and upkeep.

Standardization also facilitates purchasing, in that the vendor who has once filled an order and recorded the specifications is presumably in a position readily to fill future orders of the same kind. Planning does not have to be done over again and the chance of misunderstanding is lessened. Time is also saved, for the goods may be ordered by wire. The specifications already in the possession of the vendor, identified by the order number, enable him at once to notify the buyer whether or not he can make delivery, and within what time.

Bargaining.—Bargaining, while still a prominent feature of business in its present stage, is gradually being displaced by one-price policies in connection with standard-

ization. Bargaining in moderation perhaps adds a zest to business dealings; in its extreme it becomes ridiculous, as in the case of the *ultimo precio* of Mexico. The seller asks a high price, the buyer offers a low price, and finally an intermediate price—the *ultimo precio* or “final price”—is agreed upon. So it is with the buyer who habitually resorts to bargaining in his dealings with salesmen. The salesmen quickly learn to expect a “beating down” of the price by the buyer, and accordingly, fix the original price at a point which allows a safe margin for concessions. The buyer should be “posted” on the cost of production and the fair price of the classes of goods which he buys. If then the seller’s price is too high he has a reasonable basis upon which to demand a reduction. He may deliver to the salesman an “ultimatum,” with a time limit stated within which the salesman may agree to his terms, but he should in such a case be sure of his ground, and should mean and “stick to” what he says. The policy of wearing out the salesman by a preliminary “rough-handling” by subordinates may sometimes result in the securing of the goods at a low price, but what is saved in price is likely to be lost in service and good-will. The real value of the efficient purchasing agent is in his knowing when and where to buy, rather than in his ability to drive a hard bargain. He should scrutinize the market continually in order to discover upward or downward tendencies of prices of the various commodities in which he is interested, and should ascertain, if possible, not only the directions of price changes but also the causes. The most satisfactory means of visualizing price fluctuations is by the construction of “price charts,” which show

month by month and year by year the price paid, quantities purchased, and quotations received. Such a study of market conditions, besides aiding the purchasing agent in his actual placing of orders, enables him to supply authentic information to the cost chief, who must be guided in the preparation of his estimate-sheets solely by the judgment of the purchasing agent. The cost-sheet is based upon the prices which actually have been paid, but the estimate-sheet is based upon the purchasing agent's opinion as to the market price of the materials included in the estimate at the time the estimate is made, or in some cases, as of the date when the order is to be filled.

Terms.—The terms upon which a purchase can be made may be as important as the price, or more so. In the case of a business which has sufficient capital and which is able always to pay cash or its equivalent, the terms of service or delivery are of primary interest. If, however, there is a shortage of ready money in the business, it may be possible at the sacrifice of price to secure terms of payment which will enable the purchaser to resell the goods and pay for them out of the proceeds, or to install machinery on a partial payment plan under which the new equipment may even make a sufficient additional profit to take care of the payments as they become due. By the judicious use of credit in making purchases, a business of limited capital, in short, is able to maintain its "balance," or co-ordination of activities, so that the greatest aggregate profit will be realized, and so that the growth or development of the business may take place along the lines of its most profitable policies. Such

considerations as these may far outweigh the factor of price.

The "competitive system" in purchasing.—Under the so-called competitive system of purchasing the specifications are drawn up to include all the elements except price. Bids or informal tenders are asked for—all likely vendors being notified by advertisement or otherwise—and the contract is awarded after a careful consideration of the bids or informal tenders received.

Emergency service.—The buyer, other things being equal, should place his regular orders with the vendors who are in the best position to render immediate service in case of emergency. Emergencies, in this sense, may be taken to include any unforeseen demand by the purchaser for the goods in question, including demands for repairs in case of a breakdown, or replacements in case of fire or other disaster, or demands for materials to fill rush orders.

Rush orders.—Rush orders are frequently unavoidable, but are likely to be expensive to buyer as well as to seller, and should be discouraged, as far as is possible. Mr. Elmer E. Erickson, purchasing agent of the Chicago Junction Railway, suggests that all rush orders be made out on special requisition blanks with a column provided for notations of extra costs. "The result," says Mr. Erickson, "would undoubtedly be a more careful attention to planning ahead, and a suppression of the chronic rush order man."¹

Purchase orders.—When the purchasing agent has made his decision as to the vendor from whom he will

¹ 100 per cent., April, 1916.

| A. B. Co. PURCHASE ORDER | | No. 191... Ship to..... Address..... Via..... | | | | | | | | | | | | | | | | | | | | |
|---|-------------|--|----------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| To..... Address..... Terms..... Place our Order Number on all invoices and packages Send duplicate Invoices for each Shipment | | | | | | | | | | | | | | | | | | | | | | |
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| You are hereby authorized to furnish the above material as stated Acknowledge receipt of this order A. B. Co. per..... | | | | | | | | | | | | | | | | | | | | | | |

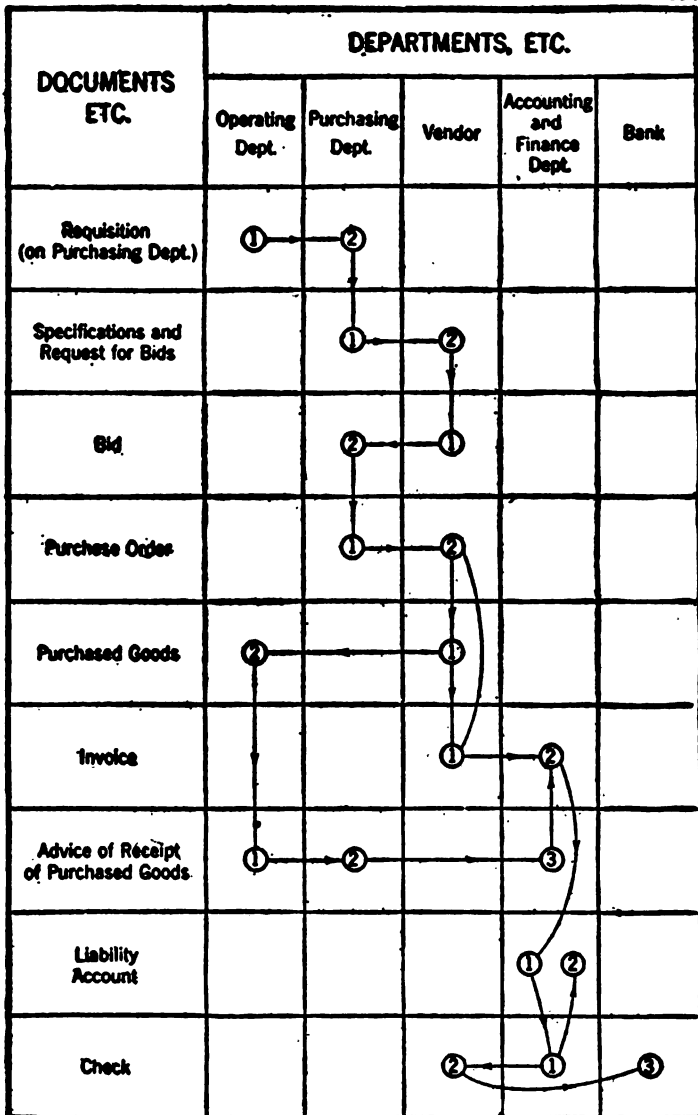
PURCHASE ORDER

purchase the goods in question, he fills out an order for the goods and sends it to the vendor. This order is known as the purchase order, and should be made out on a standard form. A specimen form is shown herewith.

The original copy of the purchase order is sent to the vendor; the duplicate is filed in the purchasing department in the file of "unfilled orders." A third copy may be sent to the department which has requisitioned the goods and a fourth copy to the receiving department for the information of the receiving clerk in order that he may make proper disposition of the goods upon their arrival. In order to obtain an additional check upon the items of the shipment, the copy sent to the receiving department may not show the quantity ordered—the receiving clerk, therefore, is forced actually to count or weigh the goods. The count of the receiving clerk should, of course, tally with the quantity shown on the original order.

Saving steps in purchasing.—The two charts which are shown on the following pages are designed to illustrate the loss which results from "red tape" in purchasing methods.

Securing delivery.—When a copy of the purchase order is placed in the "tickler file" of the purchasing department, a signal is attached to it indicating the date upon which the goods should arrive. If the shipment is not received within the time specified the purchasing department sends a "follow-up" to hasten the delivery. All goods must be "followed up" until they are received. The vendor is requested to acknowledge receipt of the order, making at the same time a promise of delivery.



PROPOSED PROCEDURE INCIDENT TO PURCHASES OR CONTRACTS, \$100 OR MORE, BY THE CITY OF PHILADELPHIA

It is often advisable to keep local and out-of-town purchase orders and correspondence separate, in order to facilitate the following up of orders by telephone or personal calls, in the case of orders placed with local vendors.

Receiving the goods.—When the goods arrive at the receiving room, the receiving clerk enters the quantity received on a "material received slip." Records of materials received are made in duplicate, one copy going to the general office, where it is checked up with the seller's invoice before the bill is paid; the other copy goes with the goods themselves to the store room, where the perpetual-inventory clerk compares the quantity with that appearing on the material-received sheet before making entries on his stock cards.

Inspection.—When the goods are received they must be inspected. If found to conform to the specifications of the purchase contract, they will be accepted and put into stores or sent to the "jobs" where they are to be used. If defective, they will be returned to the vendor or held pending an adjustment.

With respect to some classes of goods a simple examination of the articles received is sufficient, but with respect to other classes elaborate chemical or physical tests must be applied. These tests are applied by means of the equipment in the experimental and testing laboratories mentioned earlier in this chapter—the laboratories serving the double purpose of furnishing the data from which the standard or special specifications may be evolved, and afterward of testing the goods or materials in question with respect to their conformity to the requirements of the specifications. In the case of goods

which require chemical or physical testing in the process of inspection, the incoming shipment will be routed through the receiving department via the engineering department.

Inspection at the source.—The responsibility and reputation of the vendor determine, as a rule, the degree of rigidity with which inspection must be made before the goods are accepted. Even in the best of faith, however, the vendor may be turning out parts or other supplies which upon delivery would be found to be defective—perhaps because of a misinterpretation of the specifications covering them. Inspection at the source, therefore, is sometimes resorted to, the purchasing company, with the consent of the vendor, placing an inspector in the vendor's plant to make certain that no mistakes are made in their manufacture. By inspection at the source delays are avoided and the waste of material is prevented.

Return of defective goods.—Goods inspected and found defective will be refused and either returned to the seller or held at his disposal, unless an adjustment in price or otherwise can be agreed upon. Here again it is important to note that the purchasing agent should have a knowledge of his legal rights in rejecting shipments found defective. With respect to all sets of specifications the "limits of tolerance" should be defined.

Keeping stock records.—Accurate stock records, as suggested by W. R. Basset in the *American Machinist*, May 6, 1920, are just as important as accurate money records. The purposes of the stock record, as summed up by Mr. Basset, are : (1) to make sure that all materials are used for proper purposes; (2) to prevent production

delays through lack of needed material; (3) to prevent overbuying and misuse of capital; (4) to make sure that all material will be accounted for as part of the finished cost; (5) to facilitate inventories; (6) to save the time of workmen ready and calling for supplies.

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CHAPTER XVIII

SELLING

THE POINT OF VIEW

What is a need—how ascertained?—“If you need a thing you pay for it whether you buy it or not.” So runs the argument of the salesman, and his saying is a true one. We may pay for it in money, or in health, or in happiness. If we need it and do not buy it, it costs us more. The salesman is justified, therefore, in using every effort to sell us what we need.

But how does the salesman know whether we need a thing or not? How do we know, ourselves? What is a need, and how does it differ from a mere “want”? We may want an expensive automobile, but if we cannot afford it, we do not need it. We may not need it, even if we can afford it. Most needs are not absolute, but comparative. We may need something else more. We should always want more than we need, but our wants should develop into needs only after our earlier or more important needs have been satisfied, and then only in proper perspective. For example, we may want an automobile—even need one as providing healthful diversions from hard work—but this want should not be magnified into a need for a Rolls-Royce or a Pierce Arrow, unless there is no question as to our being able to afford it.

Again, we may need a thing and still not want it. We

may not know we need it, or it may be something disagreeable, which we put off getting for as long a time as possible. Who is to decide whether we need it or want it—we ourselves, or the salesman?

We may sometimes thank the salesman for having sold us something which at the time we did not want and did not know we needed—insurance, for example; or we may harbor a lasting resentment toward him because he has induced us to purchase something which we did not need—somebody's autobiography in seven volumes, for example. We will not buy anything else from him, no matter how badly we need it.

Consumers' needs the basis of profitable selling.—The purpose of these rather trite observations is to bring out the fact that, in selling, there must be established a certain point of view. What shall be our motives in selling, what circumstances shall determine whether or not we should endeavor to make a sale? We desire, of course, to make as much profit as we can—not upon a single sale but upon the aggregate of our sales. How may this result be secured? Obviously, only by satisfying the real needs and real wants of the consumer. Any selling which is not based ultimately upon the consumer's needs and wants must shortly prove to have been unprofitable. When the producer sells to the dealer, for example, it is not enough that the dealer shall have thought that he needed the goods. The dealer may have overestimated the demand, or may not have understood thoroughly the nature or quality of the goods. The only safe basis is the actual need of the consumer, and the producer cannot escape the responsibility which rests pri-

marily upon him to determine this need—for he knows, or should know, better than anyone else, the nature of his goods and their adequacy or inadequacy to supply the consumer's needs.

Motives, however sincere, are poor guides unless enlightened by knowledge. When the blind lead the blind, both fall into the ditch. The producer and the dealer must unite their efforts to ascertain (1) the needs of the consumer, through analysis of the market, and (2) the suitability of the goods, through analysis of the goods themselves, in their relation to market needs. Market must be regarded as being the demand of consumers, and not that of dealers.

The consumer pays.—We should not begrudge the consumer's enjoyment of the special consideration which he receives. He pays for it. In the appropriate words of Paul E. Derrick, creator of the "Gold Dust Twins," "Johnny Walker," the "Quaker Oats" man, and other notable personages in the world of advertising: "The consumer pays for the oil used in the engine, the ink used in printing the invoice, the bookkeeper's pen, the chairman's mahogany desk, the cost of cutting the grass in front of the office, the director's motor car, the page's buttons, the firm's subscriptions to charity, the very smoke that floats from the tall chimney; and, finally, the simple or elaborate tomb to mark the last resting place of the body of the man who possessed the requisite genius to make the dream a reality."¹

The function of selling, defined.—Selling, in its true

¹ Paul E. Derrick, *How to Reduce Selling Costs*, George Newnes, Ltd., London, 1916.

function, accordingly, is seen to be the exchanging of goods for money or its equivalent, resulting in the satisfying of a need of the consumer, the gratification of which is within his financial means. Selling upon any other basis brings a train of economic losses in its wake, which adjust themselves finally as losses to all concerned in the transaction. The function of selling is primarily the distribution of the world's goods to the places where and at the times when they are needed; and the profit to the sellers tends to be in proportion to the service which they render in making this distribution. Thus the rendering of the greatest service becomes the means of making the greatest profit.

THE COSTS OF SELLING

The high cost of selling.—It costs more to sell the world's goods than to make them. That this is true is generally known, but cannot be generally realized, or there would surely be a greater effort made to reduce the costs of selling. The amounts involved are so large that even a slight improvement in technique might effect a saving of billions of dollars a year. Perhaps an explanation of the apathy of the public with respect to this problem is in the fact that the increase in the cost of selling has been a gradual one, coming so slowly as to take the world unawares.

In the earlier periods of industrial history, when needs were fewer and simpler, production was the main problem. Production was, for the most part, localized—that is, each community was self-sustaining. The producer must have been able to gauge to a nicety the demands

of his market, and to adjust his output accordingly. The consumers must have been able to convey to the producer exact information as to their needs. We know, as a matter of fact, that nearly all goods were "custom made," that is, made to order.

Crude as were the methods in those days, there must have been but little misdirection of effort, so far as selling was concerned, except that an indefinite amount of time may have been spent in bargaining. Production costs were high, of course, because labor-saving methods had not been devised; machinery was uninvented; time-and-motion study had not been thought of; but selling costs were low.

With such an assumed condition as our starting-point, let us consider how and why the change has come about; for now production costs are low and selling costs are high.

Elements of the selling cost.—The selling cost is made up of all the costs, with the exception of the producer's profit, attaching to a product after it reaches its consumable form, and is the difference between the selling price and the sum of the production cost and the producer's profit. It might seem that dealers' profits were not a cost, in the same sense in which their actual expenses are a cost, but this objection tends to disappear when we consider that the profit of the dealer is the amount paid to him in order that he may be willing to perform his function of distribution. If this is true, his profit is a selling cost as truly as the wages of the delivery boy is a selling cost.

A grouping of the various items of selling cost such as

follows cannot, of course, represent the actual distribution of costs in particular cases, but it may serve to give us a clearer visualization of some of the problems in the reduction of selling costs, aside from those involved in the organization of business as a whole, touched upon above. The function of selling, like other functions of a business, may be subdivided into planning and performing.

SELLING COSTS ENTERING INTO THE SELLING PRICE

1. *Planning*

- a. Market analyses; theoretical correlation of market and product
- b. Advertising; purchase of good-will
- c. Credit investigations

2. *Performing* (execution of plans)

- a. Investment in buildings and equipment devoted to selling; up-keep; fixed charges
- b. Salaries, wages and expenses of managers, salesmen; and other employees
- c. Distribution
 - (1) Transportation of product to sales depots; rehandling
 - (2) Storage, insurance, depreciation
 - (3) Delivery to consumer
- d. Collections and bad debt losses

3. *Profits*

Why selling costs are high.—Why should these costs of selling have come to be a greater factor in the selling price than the costs of producing? The explanation of this condition is in the fact, on the one hand, that more attention has been directed toward lowering the costs of

production; and on the other hand, in that the factors entering into the selling cost are more difficult to estimate and control than are the elements entering into the costs of production. It would seem that modern business has attacked its problems, so to speak, at the wrong end. The manufacturer has built his plant, produced his goods and then has expected the selling department to dispose of them. The competition between producers, who have been turning out goods in the greatest quantities possible, without due regard to the actual demand, has caused excessive advertising and salesmanship costs, as well as excessive costs of distribution, the latter resulting from duplication of delivery systems serving the same consumers. Since competition tends continually to force down the selling price, the manufacturer has endeavored to meet this competition by reducing the costs of production, which he finds himself best able to do by increasing his output—by taking advantage of the economies of large-scale production, thus overcoming the outstanding defect of the earlier régime, in which the cost of production was high. Production, accordingly, has been proportioned to the best efforts of the selling department rather than to the actual needs of the public. Planning for sales has followed production, instead of preceding and determining production.

The inevitable consequence of such a maladjustment of effort has been the present high cost of selling—high, because every stage of the selling process is attended by uncertainties. We may readily see how the entering of uncertainty into each of the various phases of the selling operation has caused an increase in cost, if we trace

briefly the evolution of selling methods from the early days, when selling costs were of minor importance, until the present, when they are larger than production costs. We may assume, in the first place, that with the widening of the market the producer found himself unable any longer to keep in touch with his customers. His customers no longer came into his place of business, explaining exactly what they needed. Instead of making or producing for a known and definite demand, the producer was obliged to guess at what was required. If he produced too much, he lost. If he produced the wrong article, he lost. To offset the cost of this uncertainty, accordingly, he was compelled to add a considerable percentage to his selling price.

Again, taking only the most obvious phases of the uncertainty which it has become necessary to provide against, there arose the uncertainty of payment. Not knowing his customers personally, the producer could no longer be sure of collecting his money when he made a sale. Each bad debt offset the profits on a number of sales.

With the greater distances goods had to be moved, delivery became uncertain. Shipments might go astray; perishable products might spoil in transit; goods overdue might be rejected. Clearly, it became necessary to adjust the selling price to offset the cost of this uncertainty.

Competition itself became uncertain. The producer could not know who and how many his competitors were, what their methods were, what their prices would be. He might find himself alone upon the market, or he might

find the market overstocked, so that none could make a profit. Such a competition in the dark, with its duplication of effort and non-adjustment of supply to demand, could not but add an appreciable amount to the selling cost.

The elimination of uncertainty.—These observations, made almost at random in view of the conditions which modern selling labors under, would seem to justify us in the conclusion that the most pressing need of business, in order that the cost of selling may be reduced, is the elimination, so far as possible, of uncertainty. Among the obvious means of doing away with uncertainty are: (1) accumulation and classification of information,¹ (2) progressive standardization, and (3) a functional division of the labor of manufacturing and distributing. Business, of course, has recognized the value of standardization and of a functional division of manufacturing and selling, and has made some progress with these ends in view, but the progress has been limited because business has not been organized under a controlling centralized authority. The public has been unwilling to permit such combinations of businesses as would have made possible an interbusiness standardization and functional division of labor, particularly with respect to sales and distribution, fearing that business would not use its power wisely and in the public interest. With the growing recognition of the fact, however, that in the long run the interests of business and the interests of the public are nearly, if not quite, identical, it is probable that in the future such a combina-

¹ Attention is called to the work of Trade Organizations.

tion or federation will be permitted; although it is doubtful as yet how much governmental control will be maintained after the present war emergency conditions are past. It seems safe to say that business must either prove itself worthy of being granted self-government, or must submit to a large measure of control by the political government. In any case, business must have a head. Standardization, with its implied correlation and co-ordination, can be effected only by the management, and not by the units composing the organization.

Objectives of the seller.—Contrary, perhaps, to popular supposition, the enlightened seller, except in isolated transactions, does not endeavor to sell his goods at the highest prices possible, but at the lowest prices possible, consistent with a safe margin of profit.¹ He depends, for his aggregate profit, upon a high rate of turnover and a large volume of business, knowing that high prices will only attract competition, or drive away his customers, and make it more difficult for him subsequently even to make any profit at all. Good-will is an asset that must be preserved at all costs. Thus the seller, whether naturally so inclined or not, is compelled to be quite ethical in his dealings with the public. He knows that if he takes care of service, profits will take care of themselves or, at any rate, that they will require a minimum of attention. He knows that, as the preacher said, "Honesty is the best policy—in the long run."

¹ Care must be taken to differentiate between selling price and selling cost. Selling price includes all costs and profits, including those of the producer. Selling cost includes all costs and profits exclusive of those of the producer. The seller, of course, is interested in keeping down the price by keeping down all costs except his own profits.

Selling, then, like other functions of a business, demands the ascertainment of the "one best way"—the way of the least economic waste. Our consideration of the means of eliminating economic loss in selling or, in other words, of lowering the costs of selling leads us to divide the subject into three main parts, in the pages that follow. These three divisions of the problem will be entitled: "Correlation of Market and Product;" "Salesmanship;" and "Distribution." Other phases of the selling problem, including "Advertising," "Credit" and "Traffic," are considered in separate chapters.

CORRELATION OF MARKET AND PRODUCT

Knowledge of the product itself.—The first step in selling, or at any rate in salesmanship, with respect to the selling of any given product, is the acquiring of a thorough knowledge of the product itself and its suitability or adaptability to market needs.

Demand.—The question must be considered, is the article in demand? Is the demand actual, or is it merely potential—that is, developed, or undeveloped? If the demand has been developed, has it been through education of the public to the recognition of the value of such an article or is the article a necessity, which to be sold, needs but to be seen?

Developed demand.—If the demand has been developed as a result of educational propaganda in the past, a study of the methods which have proved most successful is likely to be of value in determining the methods of exploitation which are to be adopted.

Undeveloped demand.—If, however, the demand is latent, a consideration of the educational methods which

have proved successful in similar cases may be profitable. There must, of course, be a careful investigation, in the latter case, of the reasons why the demand has not been developed. It may be that there is some feature of the article or of such an article, that has disagreeable associations; or it may be that the public has become prejudiced against articles of this class for some ascertainable and removable cause.¹ If there appears no intrinsic reason why the article should not come into general use, the study will next take the form of determining how a demand may most easily or most economically be developed.

Forced, or natural, demand?—A further consideration, closely allied to the foregoing, is whether the demand—if it exists—is forced, or natural. An artificial demand may be created—that is, the public may be induced to want something which it does not need. Aside from the question of ethics involved in forcing the sale of an article of doubtful value, such a demand is likely to be maintained only at considerable advertising cost, and is likely to vanish at any time in spite of all. If, on the other hand, the demand is a natural one—that is, if the article meets a fundamental human need, the cost of maintaining publicity, once the article becomes known, is negligible by comparison.

¹ Choosing an illustration at random, there are many uses for dynamite in farming and amateur engineering. It is difficult, however, to popularize its use, because the public formed its opinion of dynamite in the earlier days, before improved methods of manufacture and control had removed the element of uncertainty as to when and under what conditions it would explode. The Du Pont Powder Company has spent a considerable amount of money in advertising and in making practical demonstrations in agricultural communities of the employment of dynamite for clearing land of stumps and boulders, pulverizing the soil before planting fruit trees, and the like.

Continuity of demand.—The demand will also be considered, as to whether it is permanent, temporary, or seasonal. It will be remembered that an article which meets a seemingly permanent demand may at any time be displaced by the introduction of a cheaper or a superior article which meets the same need. If the demand is temporary, it must be determined whether enough sales can be made within the limited time to justify the cost of the selling organization. If the demand is seasonal, it must be remembered that the sales organization will have to be maintained, even although at a lessened expense, during the time of the year when no sales can be made. The cumulative value of advertising is also lost to a large extent when publicity is discontinued for a time. Numerous other considerations similar to these will suggest themselves.

Serviceability.—The considerations touched upon above relate to the existence or non-existence of a demand. The question of serviceability, while not entirely dissimilar, relates to the use which purchasers will make of the article.

Necessity, or luxury.—In the first place, with a view to determining the sales arguments to be used, the suggestions which will prove most effective, as well as the classes of buyers who will be appealed to, the article or product must be classified, as to whether it is a "necessary," a "necessity," a "convenience" or a "luxury." The distinction between a "necessary" and a "necessity" may be pointed out. A "necessary" is something like food or clothing, which is indispensable in the support of life, while a "necessity" is vital only for certain objects.

General or special service.—The selling plans will be made in view also of whether the article will be of general service, or of only a special or limited service. If the article is a soap, for example, it may be taken for granted that if it is a toilet or a laundry soap the sales appeal will be a general one, based on some special superiority or attractiveness of the product. If, however, it is a “healing” soap, or a dog soap, the appeal will be of a special kind, addressed to special audiences.

Variety of uses.—A consideration somewhat similar to that noted above is whether the article has but one use, or various uses. The more uses it has, the more “talking-points” can be thought of. This feature forms the basis of one of the well-known Sapolio advertisements —“There are many uses for Sapolio—everyone finds a new use.” We are familiar also with advertisements of gasoline engines, which are shown at their household tasks—pumping water, washing clothes, churning, or generating electricity for lights. Each additional use which may be made of an article makes it easier to sell.

Durability.—The question of durability involves not only the satisfaction which the article will give to the purchaser, but also the length of time the article may be expected to last—whether it will last indefinitely or be replaced from time to time. It will readily be seen how different in these respective cases will be the selling plan and the sales organization. In either case, there must be a post-sale service, but if the article is one which is a fixture the service will take the form of interest in the customer’s satisfaction, and readiness to supply repairs; whereas if the article is short-lived there will be a constant

succession of additional sales-appeals, probably with stress upon the user's previous satisfaction and upon the willingness of the seller to guarantee future satisfaction.

Basis of appeal.—The product will be studied further with regard to the kind of want which it will satisfy—as to whether its use is economical; or whether it must make an appeal rather to comfort, or to pride.

If the use of the article or product involves extra expense, it may be possible to show that, nevertheless, a saving is effected. A vacuum cleaner, for example, costs more than a broom, but less than a doctor and a trained nurse. Dust is not only dangerous, but expensive. It spoils the furniture and soils the clothes. It may be shown that it might pay to get a vacuum cleaner and charge the extra expense against the saving in laundry bills, and the saving in time. Perhaps with the help of a vacuum cleaner one maid might do the work of two.

It may be advisable, or even unavoidable, to disregard the question of economy, and to decide upon making an appeal to pride or to some other instinct. A careful study of the product is necessary before it can be known which course is best.

Quality.—The preliminary study of the product must include also finding out what its "quality" is. Quality is a composite of materials, design, workmanship, appearance and finish. The quality will affect in several ways the nature of the sales-appeal and the selection of the class of buyers to whom the sales-appeal will be directed.

While there must, of course, be a proper balance of the various elements which enter into quality, we may assume that the production department has fixed the

grades of material and workmanship, and that it is now the task of the sales department to evolve the most effective means of presenting the merits of the article to the public. The sales appeal must be specific, if it is to be effective; it may be taken for granted that generalities are uninteresting. The most interesting or the most desirable quality which the article possesses is likely to be featured in the advertising and in the arguments used by the salesman.

The advertiser should know the product thoroughly, in order to present its merits not only forcefully but intelligently. For the same reason, the salesman must know as much as he can learn about the article he is selling, because he represents the house and the article, and the buyer is likely to judge both by the salesman himself.

If the salesman cannot give intelligent answers to questions about material and workmanship the buyer immediately loses confidence in him, and at the same time loses confidence in the product and in the house that was so inefficient as to send out an ignorant salesman. He feels that somebody is "trying to put something over on him" for the sake of a profit on the sale—that the house is lacking in the sense of responsibility which a reputable house feels toward its customers—for how could such a salesman be the medium through which service could be given? If he does not know his product, he cannot know its uses and the conditions under which it will or will not give satisfaction. In these days the buyer has the right to expect and to demand service with every sale.

Name or trade-mark.—A vital consideration in the

selling of almost any product is that of how, upon the market, it may be identified or distinguished from similar products. It is obvious that in order that a cumulative value may be given to sales appeals the product must be an entity. To be an entity it must have certain distinguishing characteristics, and must have a name. The product may have a name of its own, or may bear the name or trade-mark of the house that manufactures or sells it.

The name should, of course, be free from legal difficulties. Aside from the ethics involved in unfair competition, money spent in promoting the sale of an article or in building up a business the name of which is misleading is for the most part spent in advertising the original or genuine. If profits are made, in such a case, they are likely to be spent in defending infringement suits or in satisfying judgments.

With respect to trade-names, percentage of confusion between them (determined by an interesting series of psychological experiments), and the legal decisions in the general cases, Paynter¹ cites the following examples:

| <i>Original</i> | <i>Imitation</i> | <i>Per Cent Confusion</i> | <i>Legal Decision</i> |
|-----------------|------------------|-------------------------------|---------------------------|
| Sozodont | Kalodont | 28 | Non-infringement |
| Nox-all | Non-X-ell | 28 | Infringement |
| Club | Chancellor Club | 35 | Infringement |
| Bestyette | Veribest | 35 | Non-infringement |
| Mother's | Grand-Ma's | 38 | Non-infringement |
| Au-to-do | Autola | 40 | Infringement |
| Peptenzyme | Pinozyme | 43 | Non-infringement |
| Green River | Green Ribbon | 50 | Infringement |
| Ceresota | Cressota | 63 | Infringement |

¹ Richard H. Paynter, "Psychological Study of Confusion Between Word Trade-marks," *Bulletin of United States Trade-mark Association*, May, 1915.

The name chosen to identify the product should not only be free from legal difficulties but should be distinctive. A suggestive name is usually preferable to a meaningless name, but a "coined" name without objectionable features may be given a meaning by means of a consistent advertising policy and by means of a consistent quality in the article itself. "Kodak," for example, when it was first coined was merely a combination of letters or sounds, and meant absolutely nothing, but now it means a great deal, and is worth a great deal.

Besides being distinctive, if not suggestive, a trade-name should be pleasing in sound and easy to pronounce. "Baby-talk" names, sometimes attached to food-products, are, to many people, exceedingly offensive. People cannot be induced to "say them to the grocer-man." To be suggestive a name need not refer to the product it identifies. A cigar, for example, may be named for a philanthropist who, perhaps, did not even smoke cigars; but the suggestion in such a case is of such things as ease, comfort and contemplative thought—quite worth-while associations for a cigar to have.

Little need be said of the folly of choosing a name which is difficult to pronounce, or the attempt to pronounce which may cause embarrassment, as in the case of certain French and other foreign names, which are sometimes followed by instructions for pronouncing. One of the rules of modern selling is to make everything as easy as possible for the buyer.

Names of places, descriptive names, or words found in the dictionary, may not be registered as trade-marks or trade-names, but may be used without registration; and

if priority of use and continued use, such as to make the name of the article more important than the name of the place can be established, the user is protected under the law.

The package.—The package in which a product appears on the market may be fully as worthy of careful attention as is the product itself. First impressions are likely to be the lasting impressions. We pride ourselves upon our quickness of judgment and hold ourselves ready for a surprisingly long time to return to our "first impression" of an article or a person and prove that our initial judgment was correct. For this reason alone it is worth while to be sure that the package makes a favorable impression. It is true also that if we are pleased with the way in which the product has been presented to us—by the advertisement, the salesman, and the package—we are apt to find the product itself to our liking, so strong is the influence of suggestion.

The package alone may be an advertising medium of first importance, if the advertising thereon is restricted to that of the contents of the package. Women, who are commonly believed to be addicted to the habit of "shopping"—going out to buy something, without knowing beforehand just what it is to be—are sure to be attracted by a neat or otherwise pleasing package. It is quite permissible to place upon a package various advertisements of kindred products, put out by the same manufacturer or dealer. The public will resent, however, the use of the package as an advertising medium, carrying paid advertisements. An unfavorable impression is made, and the idea created in the mind of the buyer that it is his money

which pays for the advertisement, whereas, he feels that the article and its package should be devoted entirely to the purpose for which he has paid his money.

Besides making its appeal from shelf or show window, the package may possess features of real convenience to the user. It would be difficult to estimate, for example, the value of the Colgate tooth-paste package, from which the paste "comes out like a ribbon and lies flat on the brush."

With respect to the convenience of the package, we might learn valuable lessons from nature, as well as from the manufacturers of artificial products. It cannot be doubted that the banana, for example, owes not a little of its popularity to the convenience of its package. The egg, also, is in favor quite as much because of its convenient package as by reason of its intrinsic qualities. It will be observed, moreover, that because eggs are turned out as a standardized product in a standard package, the selling cost is very low—that is, the selling price is but little above the cost of production. Production is standardized, but not regularized, but this disadvantage is largely offset by the fact that the supply throughout the year is equalized by means of cold storage. It is true that standardization in size is not thoroughly satisfactory. The public, however, generally waives this point, although here and there there may be one of us who, like the miser in *I Promessi Sposi*, measures the grocer's eggs with an "egg-ring," rejecting those which are so small that they will pass through.

Determination of the selling price.—In view of the considerations mentioned in the preceding paragraphs,

relating to the study of the product itself, and in view of the considerations to be touched upon in the following, under "Market Analysis," the selling price of the product must be determined, together with the terms upon which it will be sold. The price is not determined primarily by the production cost, but by the selling cost, although, of course, allowance must be made for the cost of production when the selling price is decided upon. Price tends to approximate production cost only if production be taken in its broadest sense, as including the delivery of the article to the consumer. Price fluctuations, as will be apparent to any observer, are out of all proportion to variations in the cost of production; if a rise in price follows a rise in production cost it will be observed that the amount added to the retail price is likely to be several times the amount of the increase in the production cost. It is not that the increase in the production cost itself has brought about the whole of the increase in the selling price, but that some general cost-increasing factor has affected production cost and selling cost at the same time. It must be remembered that a dollar added to the cost of production must, under the present system of distribution, in which it is uncertain, perhaps, whether the article will ever be actually sold and paid for, be represented in the selling price by much more than the dollar of increase in the production cost.

The selling price is usually fixed in advance, either by the producer or manufacturer or by the selling organization. It is undoubtedly an advantage in economy, tending toward a standardization, when the price is so predetermined.

In the determination of what the price shall be to the consumer, the price (or cost) to the producer and to each intermediate dealer must be taken into consideration. These dealers, or "middlemen," are, in present-day business practice, the broker or merchant, the jobber, and the retailer. The broker or merchant is, practically, the selling department of the producer. A further consideration of the different classes of dealers will be found in the chapter on "Distribution." With due allowance made for the various elements of the selling cost, the price must be such as can be paid by the class of consumers for whom the product is intended. If the article cannot be produced and sold at a price within the financial means of an appropriate class of consumers it is useless to make it or to try to sell it. Fortunately, at least for the individual producer or dealer, the very fact that an article of more or less intrinsic merit may necessarily be so high in price as to place it out of the reach of certain classes creates a demand for it among consumers in a wealthier class. Food products, in particular, furnish many striking examples of the weakness of human nature indicated by fact above-mentioned. When bacon was cheap, it was regarded as a poor man's food and despised by those who could afford to buy what the poor man could not afford. Since bacon has become expensive, it is regarded as a delicacy by rich and poor alike.

The figure decided upon as the selling price will represent not the highest price which a limited number of consumers will be willing to pay, unless the supply of the product is correspondingly limited, but the price at which the greatest number of sales can be made, consistent with

a moderate profit upon each. The greatest aggregate profit, as a rule, results from low price, rapidity of turnover, large volume of sales, and satisfied consumers, willing not only to continue their purchasing of the article in question but also to try at least once any other article which the seller may have to offer. Such conditions as these create "good-will," the most valuable asset, usually, which a business can possess. Even a virtual monopoly will find itself in a precarious condition if it neglects the building up of good-will.

ANALYSIS OF THE MARKET

The people who buy.—An analysis of the market will be, first, of the consumers who may be induced to become customers. A study of these potential customers will include the following:

Where do they live?—The nature of the product will determine the extent of the market, and whether or not it can be enlarged. The market may be world-wide, national, sectional or local. Not only the nature of the product must be considered in respect of its suitability to the needs of people in various countries and climates, but also the accessibility of the market, in view of transportation facilities and costs, nationality of consumers—involving race prejudices or customs, or difficulty of communication by reason of language.

An interesting illustration of the overcoming of obstacles to sales to foreign consumers is the experience of a well-known automobile company which was opening up its market in Russia. Their cars would not sell, and it was discovered almost by accident that the reason was

that they were painted black—a color associated with funerals. A change in the color of the paint made sales comparatively easy. A typewriter company, profiting by the experience of the automobile company, likewise painted its product in bright colors, enlarged its keyboard to fit the Russian fingers, and almost immediately found itself with a profitable market.

Climatic conditions must be taken account of. The maker of overcoats, presumably, may eliminate the residents of tropical countries from his market altogether. While he may expect to sell a few overcoats a little farther from the equator, where the winter is colder, it would not pay him to do a great amount of advertising except much farther north or south, where overcoats are worn during a considerable portion of the year.

Environment.—A study of where the consumers live involves further the question of whether they are residents of city, suburbs, town, or country. The population of a sales district or territory is of great importance, but not of more importance than the distribution of the population. The maker of acetylene or electric generators for individual home-lighting plants may disregard the dwellers in cities, so far as market is concerned. He is interested in the rural population—the number of well-to-do farmers and ranchmen in the district, or the number of country estates belonging to wealthy residents of cities.

Class of buyers.—It must be ascertained also, in a given district, whether the inhabitants, as a class, are rich or poor, what their occupations are, and how they may be reached and influenced. The nature of the article in

its relation to the classes of buyers will also be considered in this connection—whether the buyers are likely to be influenced by other people, and whether the buyers, for the most part, are men, women or children. Some articles must be sold practically by a separate appeal to each consumer, while with others it is sufficient if a few influential consumers will set the fashion of using it.

Buying habits.—Finally, the habits of the buyers will be investigated—whether they buy in large or small quantities at a time, whether they usually pay cash for their purchases or expect credit, and whether they buy from dealers or from the manufacturer direct. Each of these questions, of course, may have to be answered separately with respect to each product or class of products consumed.

Competition.—In order to determine the probable competition that must be met, these general market conditions will first be ascertained: (1) the total consumption, (2) whether consumption per capita is increasing or decreasing, (3) whether the market (i.e., number of consumers) is expanding or contracting, and (4) whether or not the market is saturated—that is, what the supply is compared with the demand.

Next, the competitors themselves will be considered (1) as to their number, (2) their resources and (3) the location of their establishments. More detailed information will also be secured, so far as possible, relating (1) to their aggressiveness, (2) their standing with the public (good-will) and (3) their marketing methods. These last will include (1) their selling methods (whether they sell through dealers, or directly to consumers), (2) the

prices at which their products are sold to dealers and consumers, (3) their margins of profit, and (4) their terms of sale (whether they sell for cash or on credit, and if on credit, upon what terms).

The products of competitors, of course, will be studied with the greatest care, with a view to ascertaining their merits as well as their defects, (1) intrinsic and (2) from the point of view of the consumer. The attitude of the public toward any article is not always a positive indication of merit or the opposite. The public may be satisfied with an inferior article, not having had experience with a better; or may be dissatisfied with a really good article which has some easily correctible defect. Many a sales agent has pondered long and earnestly over why his product would not "take," and eventually found the explanation so obvious that it had been overlooked. It is often the case that a device which seems excellent to the makers and to the management of the concern that installs it will prove a failure, the reason for which remains a mystery until the explanation is found in the attitude of the employees, who may be prejudiced against it, as threatening to do away with some of their jobs, or who may find its use disagreeable.

It is scarcely necessary to note that the study of the products of competitors, while it may afford an opportunity for putting out an improved product or an equally good one at a lower price, is not to be made with the object of finding an opportunity for "knocking." The consumer resents any reflection upon the judgment he has displayed in purchasing from competitors. If he has not yet purchased, he resents the suggestion that he might

display bad judgment in the future. In fact, the consumer, about to part with his money, is often anxious to find something to resent, and is in a dangerous mood. Moreover, "knocking" a competitor's goods is a confession of fear—and if there is one impression above all others that the salesman should create, it is that he is confident of himself and his goods and that he has no reason to be afraid of his competitors.

Transportation in its relation to the market.—Transportation facilities and costs have much to do with the extent of the market, and are also a factor in the selling price of the product. The disturbance between supply and demand caused by the European War provided an object lesson in the importance of transportation. Price movements alone were incapable of bringing about adjustments. The problem of production was seen to be no greater than that of transportation. Both were equally vital, but in that emergency it was easier to secure ample production than adequate transportation. There was plenty of coal at the mines, and plenty of sugar in Java; but there were not enough cars and not enough ships. Production itself was in a large measure dependent upon transportation, with respect to raw materials and fuel.

The phases of the problem to be considered in an analysis of transportation facilities in their relation to the market will include the following:

- I. What are the transportation facilities?
 - a. Railroads or trolley lines
 - b. Highways
 - c. Present condition of transportation facilities
 - d. Means of extension, if necessary

- e. Storage at terminal
- f. Stability of transportation service
- 2. Time required in transportation?
 - a. Service to consumers; promptness of delivery
 - b. Perishable products
 - (1) Deterioration or injury in long haul
 - (2) Icing or other attention in transit
 - (3) Estimates of the condition of the market upon arrival of goods where transit is long
- 3. Rates?
 - a. Freight
 - b. Express
 - c. Parcels post
- 4. Cost of crating and handling?
- 5. Cost of reclaiming rejected shipments?
- 6. Competition?
 - a. Of local producers
 - b. Of producers at a distance
 - (1) Their production facilities
 - (2) Their transportation facilities, including rates

Other questions which will arise are: Regardless of competition, will the addition of transportation charges to other costs make the price of the goods too high? At what selling-price will the market vanish? Rather closely connected with the question of transportation itself is that of the organization often required for handling goods at their destination. Is the market at the destination large enough, or profitable enough, to justify the

necessary sales organization at that point? Is the demand constant, or seasonal, or only temporary?

The broader aspects of the transportation problem will be considered in the chapters on "Traffic." Other phases will be touched upon incidentally under "Distribution."

CHAPTER XIX

SELLING

(*Continued*)

SALESMANSHIP

What is meant by salesmanship?—The word “salesmanship” is comparatively new in our vocabulary. It is not found, for example, in Webster’s Unabridged Dictionary of 1900. Its use or meaning has therefore not as yet become standardized. New words are often overworked, and it is probable that this one has been. We shall not go far astray, however, if we define the term “salesmanship” as including no more and no less than: any means, direct or indirect, by which it is sought to induce or persuade a given individual or association of individuals to purchase a given article.

Salesmanship as distinguished from advertising.—Sales appeals, however specific, which are based on a general formula and into which the element of personality does not enter, as between the buyer and the seller, must be classed as advertising and not salesmanship. Certainly, the seller may put his own personality into a sales appeal, but it still must be classed as advertising unless the personality of some particular buyer is taken account of as a factor in the prospective sale. When we use the word “individual” in this connection we mean one who is an individual from the standpoint of the seller—a possible

buyer about whom something is known. The sending out of a set of form letters, for example, would be advertising, even if those to whom the letters were addressed had been carefully selected, with respect to their occupations and ratings. If, however, the sender of the letters should say: "We had better mail one of these letters to Jones in Blankville—this is just the kind of thing that would interest him"—that would be an act of salesmanship. The salesman always aims at a definite mark, and not at individuals in the mass, as does the advertiser.

Selling in its broader sense is a matter of policies deduced from statistics. Advertising is that branch of selling which is devoted chiefly to the upbuilding of good-will. Salesmanship proper is a matter chiefly of the personal relationships involved in selling.

The basis of successful salesmanship.—There are several psychological elements which are necessary to a sale, and the most vital of them all is confidence. Confidence usually, but not necessarily, connotes integrity, or honesty; but, strictly speaking, the confidence which forms the basis of successful salesmanship is no more than mutual understanding. Salesmanship, like any other art or science, may be used for unethical purposes. Chemistry is none the less chemistry, even if it produces an anarchist's bomb. When the burglar goes out to sell his plunder, he does not go to an honest dealer. Neither does he attempt to create the impression that he himself has come by the jewels honestly. He goes to someone in whom he has "confidence" and who has confidence in him. The seller and the buyer have confidence in each other, in the sense that each knows what the other may

be expected to do under given conditions, and what things must be guarded against.

Confidence grows out of mutual understanding, and mutual understanding results from associations in common. The nature of our instinctive reactions toward what we do not understand is well expressed in the well-known line from *Punch*—" 'E's a stranger! 'Eave 'arf a brick at 'im."

Examples of mutual associations which assist the salesman in gaining the confidence of the buyer may be found in the following:

1. Nationality; place of birth or residence; mutual friends or membership in the same organization; college and other similar associations.
2. Occupation, social standing, financial condition.
3. Personal appearance, taste as to clothes and decorative jewelry; habits, propensities, beliefs; intellectual pursuits, hobbies, and the like.

The pleasure of recognition, the community of interest, the pleasing tribute to our own tastes and judgments growing out of any of the above may bring the salesman far on his way to the securing of our favorable attention. The onrush of sympathy which we instinctively feel if any of these conditions are favorable will itself tend to inhibit the inhibitions which might otherwise arise to interfere with the sale.

This, then, is the foundation of successful salesmanship—the winning of the buyer's confidence, leading to an establishment of identity of interest. Salesmanship, as a science, has nothing to do with ethics. Unethical business methods with unethical salesmanship, however, tend

towards being eliminated as a result of non-support on the part of the public and, for practical purposes, may be disregarded.

While we are so close to the subject, it may be well for us to pause to consider the much-talked-of element of "character" in salesmanship, which is often urged as the greatest factor in success—"character" being used, as we may use it here, in its colloquial sense, signifying honesty or moral uprightness. Character is a necessity in business, but why may it not be taken for granted? Honesty is not something which can be adopted as a policy. Either a man is honest, or he is not. It happens that only honest men are likely to be successful in business, but honesty itself has as many patrons in the poor-house as dishonesty has in the penitentiary. When dishonesty in the world of business shall at length have died of malnutrition, honesty, as we now understand it, will no longer have any meaning. We cannot conceive of any quality unless there is an opposite with which it can be compared. When honesty or "character" has thus disappeared, what will then be the basis of salesmanship? It will be then what it is now—confidence, or mutual understanding.

Making a sale.—Prepared to gain the confidence of the buyer, "representing" goods which the buyer needs, how does the salesman actually effect a sale?

There are commonly said to be four stages in a sale—the pre-approach, the approach, the demonstration, and the close. The corresponding psychological states to be induced in the purchaser are attention, interest, desire, and action. These, built upon the basis of confidence, may be shown by the following chart:

| | |
|-----------------------------------|-----------|
| PRE-APPROACH | ATTENTION |
| APPROACH | INTEREST |
| DEMONSTRATION | DESIRE |
| CLOSE | ACTION |
| CONFIDENCE | |
| (ABILITY TO OVERCOME INHIBITIONS) | |

Attention.—The salesman's first step in making a sale is to attract and secure the favorable attention of the buyer. Attention should be obtained by means of something relevant to the prospective sale. If the buyer's attention is diverted from the article itself, it must be brought back again; but there is always the danger that the buyer will resent anything that savors of a salesman's trick of catching the attention. Attention must be directed to the article, and not to the salesman himself.

Harold Whitehead tells of how an insurance salesman secured the attention of a difficult "prospect."¹

Now I'll recount Perkins's story of his best life-insurance sale.

It seems that he had been planning to sell insurance to a real estate man for a long time. He knew the man was doing a land office business and was carrying only about \$5,000 worth of insurance.

Now if he approached Barnum (the real estate man) and talked insurance, he knew he would fall through before he commenced, so he skirmished around for a month or more studying his man.

When Perkins was all ready he called on Barnum and said: "Mr. Barnum, I've called to see you about your business rating. I've discovered it isn't correct."

Can you guess what happened? You're right. Barnum blew up! He evidently thought Perkins was a credit reporter or something like that. He guessed his rating was right, and no one could say he padded his assets and get away with it.

¹ "The Business Career of Peter Flint," New York *Evening Sun*, June 18, 1918.

"You misunderstand me, Mr. Barnum," said Perkins. "You haven't padded your assets at all, but you've grossly underestimated one item of yours."

Of course Barnum cooled off at that and asked, "What item?"

"Let me ask you, Mr. Barnum," parried Perkins, "are you personally responsible for your remarkable success or do you owe it to a manager or some one?"

"There's only one man responsible for Barnum's getting on in the world and that's Barnum," was his boastful reply.

"It's as I thought," came back Perkins, "and yet in your assets you value the most important item you have at only \$5,000. You give the world a false impression of yourself when you place such a paltry figure on yourself."

"Five thousand dollars? Important asset? Me?" Mr. Barnum hadn't tumbled.

"What do you mean, anyhow?"

"Just this." Here Perkins hitched his chair a bit nearer Barnum. "You carry only \$5,000 worth of insurance, thus placing that sum as your estimate of your value. Five hundred thousand would be nearer the mark."

"Lordy," said Barnum in admiration. "You're a life insurance agent, ain't you?"

"Correct," Perkins smiled.

"Why didn't you say so at first?"

"What would you have done if I had?"

"Guess I'd have terminated the interview."

"Exactly, and by so doing you would have been deprived of knowing how you were doing yourself an injustice. Mr. Barnum, you can't afford to put yourself in a poor light with the world any longer. Never mind amounts now; will you see the doctor in the morning?"

Barnum looked at Perkins in open admiration.

"A life insurance agent! Say, you ought to be in the real estate business; you're too good to be peddling insurance."

"Thanks. But how about the doctor for tomorrow?"

"Bring him around, son; you've sold me, all right. I guess I ought to have more insurance and I can't dodge the logic of your sales talk."

"He isn't my biggest policyholder," mused Perkins in conclusion, "but I got him for \$85,000."

A spectacular pre-approach, of course, is to be striven for only in exceptional circumstances. If it fails, the sale is lost, for the salesman has ceased to "dominate" the situation, and when that happens he may as well take his hat and go.

Interest.—The interest of the buyer should at first be

a rather impersonal interest. The salesman in his "approach" carefully restrains the buyer from considering the purchase of the article. If the buyer's private decision should be unfavorable, which at this stage it probably would be, there has been created an additional obstacle to be overcome. The salesman's object is to prevent the buyer from saying "no" until he is ready to ask him to say "yes."

"This motor," he may say, "runs so quietly that you can drive onto a ferry-boat and leave it running, and they'll never know the difference. * * * A doctor was looking at this car the other day and the only way he could tell whether the motor was running or not was by using a stethoscope * * * And as for speed, I was out with it last night and a motor-cop chased me for three miles. He finally overtook me, and I thought I was arrested, but he said all he wanted was permission to raise the hood and take a look at that engine. Worth looking at, too, for although it is not generally known, our engineers really designed the Liberty Motor."

The salesman, then, devotes the part of the interview known as the approach primarily to giving the customer an adequate and favorable idea of the article he is selling and to overcoming any prejudices or misapprehensions that may exist in the customer's mind. He must forestall unfavorable criticism and answer objections, if possible, before they are formulated or crystallized. The customer must be led to acquiesce in the salesman's opinion of the goods—that they are something of real merit, as the customer can see for himself—that everyone of equally discriminating judgment comes to the same con-

clusion—that this opinion is proved correct by the satisfaction of those who have actually used the goods.

Desire.—Following the arousing of the customer's interest in the goods as being, in the abstract, something of genuine merit, and useful to other people, the salesman will deftly lead the customer to a consideration of what their value to himself would be.

"Take the wheel," he will say. "Drive the car yourself." Ostensibly the purpose is to let the customer be convinced of the ease with which the machine may be driven, how it responds to pressure on the throttle. The primary appeal, however, is to the old instinct of possession, which leads us to hold what we have. The "prospect," his hand on the wheel and his foot on the throttle, passing friends or acquaintances who recognize him, feels himself to be the owner of the car, identifies himself with its possession. He begins to plan what outings he and his family and his friends might take in a nice-looking car like this—a car that no one would need to be ashamed of—so easy, too, on tires and gasoline.

The salesman now begins to watch for the moment at which to force a favorable decision. The customer may not be aware of it, but at this stage of the sale he is under the very closest observation.

Action.—The close of the sale is the most difficult part. There are many salesmen who can guide the "prospect" successfully through the preceding psychological stages, but when the time comes to get action, they fail.

Here, in particular, it is vital that the salesman "dominate the situation." To induce action, there must be action, or imitation of action. This necessary action or

semblance of action is likely to seem forced and unnatural, and to be ineffective in its purpose, unless the salesman is able to maintain an appearance of ease and confidence, commonly known as "poise." Poise is largely a matter of birth and breeding, especially in social relationships. In business relationships, however, it is probable that poise results primarily from self-confidence and familiarity with the task in hand. Self-confidence should come with a thorough knowledge of the goods and a conviction that they are really needed by the prospective purchaser. Without such a knowledge and conviction there should be no attempt to make the sale. Thinking primarily of the service which he is performing for the buyer, and not of the profit which he himself is to make on the sale, and with the familiarity with the task which results from a reasonable amount of practice, the salesman should be able to acquire the poise, or ease of manner, which is indispensable.

Why, it may be asked, is poise so vital an attribute of the salesman? It is because lack of poise, of self-control, indicates uncertainty, and arouses the buyer's suspicion. It diverts the buyer's attention from the goods to the salesman himself, or disperses it in every direction. If the situation is at all critical, the sale is almost certain to be "killed." If confidence is contagious, doubt is also contagious, and more so.

Wherever two or three are gathered together in the name of business or anything else, there is one dominating personality, one to whom the others look for initiative and leadership. Other things being equal, this man is the one who knows more than the rest.

Many a salesman has lost control of the interview and lost his sale by not knowing more about his goods than his "prospect" knew. There are elements of interest in every article or product. Why should not the salesman learn them—each of them—and use them as a means of holding the buyer's attention—of continuing to "dominate" the interview? The average buyer is willing to listen only as long as he can learn something worth knowing; he is interested not at all in the salesman's personal prejudices and preferences.

A customer entered a "men's furnishing" store to buy a collar. The salesman called his attention to two brands—the "Lion," and the "Tiger."

"The 'Tiger' is what I wear myself," remarked the salesman.

"Then I'll take the 'Lion'," answered the customer.

The salesman and the purchasing agent.—A thorough knowledge of his goods has become more than ever necessary to the salesman as a result of the development of a comparatively new business "profession"—that of the purchasing agent.

The purchasing agent is influenced not by suggestion, but by facts. He has made a scientific study of his requirements; he has on file the specifications and prices of competing goods. He takes into consideration not only the intrinsic merit of the goods but also the "dependability" of the house that offers them.

Each sale a problem in itself.—It is not to be inferred from the foregoing that it is possible to lay down any fixed rules covering the psychology of selling. The four stages through which the salesman takes his customer are

not at all clearly defined, and methods may vary with every case. About all that can be said, with reference to technique, is that favorable attention must be secured, that the customer's interest must be held while the merits of the goods are explained, that it is inexpedient to allow an opportunity even for a tentative decision until all the arguments are set forth, and that finally, when the moment arrives, action must be secured.

"The selling talk."—It has been found advantageous to put salesmen through a course of preparatory training before they go out to sell, during which course of training they learn the essential facts about the goods they are to handle and the policies of the house, and during which also they must become letter-perfect in a "standard selling talk." In actual practice, of course, the salesman may vary or modify his selling talk to suit the needs of each particular case, but having in memory a ready answer to each possible objection and a condensed presentation of each desirable quality of the product enables the salesman to give more attention to the customer, while making a sale, and less attention to himself. He does not run the risk of losing control of the situation by finding himself suddenly at a loss for the right thing to say.

Argument and suggestion.—As is pointed out by Walter Dill Scott, in his excellent book, *Influencing Men in Business*,¹ both argument and suggestion are effective in influencing men—argument being required in the exploiting of anything new or unusual, and also in selling to professional buyers. Furthermore, argument is es-

¹ Ronald Press Company, New York, 1911.

sential where the amount to be spent is an appreciable portion of the buyer's total wealth. Argument is also needed to induce men to change their customs or habits.

Suggestion, however, is preferable when the amount involved is small, in the sense that the expenditure will not be felt; when immediate action is required, and there is no time for argument; and in securing action following conviction. Incidentally, suggestion has been found more effective than argument in dealing with the general public, as in advertising. This is probably due to the fact that it is difficult to secure the attention of the public for a time sufficient in which to present an argument.

Management of salesmen.—The management of salesmen is so closely connected with salesmanship itself that it may not be amiss to include it under the present caption. Not only must the sales manager assist the salesman in solving many of his problems, but, in a sense, the goods themselves must be sold to the salesman before he is able to resell them to the public.

The first thing to do in preparing the salesman for his task is to present the products of the house to the salesman with such sincerity and effectiveness that if the salesman had a personal need for such goods he would use them himself in preference to any other. Persuading the salesman to a thorough "belief in" the goods he is to sell is undoubtedly itself a form of salesmanship. In fact, practically all the elements of salesmanship are to be found in this preliminary selling to the salesman. His interest must be secured and held; a knowledge of the origin and uses of the goods must be imparted to him; of how they may be secured; of their value, and of the

value to himself of being connected with an organization for their sale and distribution; being convinced of all these, he must be led to accept the offer, and to cast in his lot with the house in a spirit of whole-hearted loyalty. This is the very essence of salesmanship.

The sales organization.—If the field of business were a battleground (which in some respects it is and which in other respects it is not), it might be said that the salesmen are the troops in the front-line trenches. The heavy guns of advertising may blast the way, and the house let down a protecting barrage—but, after all, it is the salesman who goes over the top and meets the enemy face to face. The problem of the sales-manager, accordingly, is to dispose his strongest troops where the consumers are lodged in the greatest numbers, and to give his troops the necessary support.

In a typical sales organization, the logical market having been ascertained by a study of relevant statistics (the extent of the market depending upon the amount of goods to be sold, transportation facilities and other considerations), the market will be divided into districts, divisions, and territories. Other things being equal, the location of headquarters in these subdivisions of the market will be upon the basis of population and not of geography. Actual conditions with respect to population or theoretical consumption of the different sections of the country will be visualized with the aid of a map upon which each State, county, or other subdivision of the total sales territory is reduced or expanded to indicate its relative importance with respect to population or consumption, actual or potential, of the products to be sold. Each dis-

trict, under a district manager, with headquarters at a strategic point in the district, is cut up into divisions and each division into territories, with a salesman to each territory. The size or number of these divisions depends upon the number of salesmen each division manager can supervise, since it is essential that the division manager keep in very close touch with the work of each individual salesman. As the volume of sales increases and territories are split up and more salesmen employed, a new division must be created whenever the number of salesmen is increased to the point where the division manager can no longer keep in sufficiently close touch with their activities.

Leads.—"Leads" are items of information concerning consumers who may be turned into customers. The salesman, of course, "works" his territory closely, and constantly secures new business by his own methods; yet he is greatly helped by having such information as the main office may secure with respect to possible customers. Consumers who are not aware of the existence of a local agency, for example, or who do not know how to reach the local salesman, may "write in" for information. Many inquiries will be received in response to advertising. Salesmen may learn, from their customers or from other sources, of new business which might be secured in some other salesman's territory. A clearing-house will be maintained where all such information can be assembled and sorted out, and sent as "leads" to the local managers for distribution to the salesman who covers the territory concerned. The sales-manager, however, must not think that he does his full duty when he has supplied "leads."

Each salesman, such is human nature, usually considers his own territory the worst in the division, if not in the whole country.

"Sales quota."—The "sales quota" is the expected volume of sales for a given period in a given territory or other subdivision of the selling field. The "quota" for a given territory is decided upon after a careful analysis of all the ascertainable conditions affecting or giving informative data concerning sales. The analysis made will include analysis of records of past sales in the territory, showing rate of increase or decrease of sales; of market statistics of all kinds; of the probable results of projected advertising campaigns; and of the personality of the salesman himself.

Such a study of selling conditions obviously serves several useful purposes. By adding together the "quotas" of the individual territories the total volume of expected sales can be found. Production, accordingly, can be adjusted to the probable demand. The economies effected by such an adjustment are so apparent that they need not be specified. Advertising can be made use of more intelligently, particularly with respect to concentration upon the subdivisions of the market where it is most needed. The weak spots in the selling organization are brought to light; when the weakness is located it should be an easy matter to find the cause and the remedy—which may lie in (1) the product itself, (2) the peculiarities of the local market, or (3) in the personnel of the selling organization—probably in the salesman, but possibly in the management itself. The analysis may show, for example, that a salesman is not in territory which suits

him best. A salesman may fail utterly in New England and yet be very successful in the Middle West or on the Pacific Coast.

It is scarcely necessary to emphasize the fact that a sales organization is not an accident, that it does not grow up of itself, haphazard, but that it is a definitely-planned mechanism consisting of a number of correlated parts each with a certain function to perform, and that if performance of the mechanism as a whole is not up to the standard (or expected output) the reason and the remedy can be found just as positively as the "trouble" in a badly running automobile motor can be found and corrected by a competent mechanic.

The "trouble-shooter" of the sales organization might well consider the analogy between his own task and that of the automobile mechanic; for each part or function of the motor may be seen, with a moderate exercise of the imagination, to have its counterpart in the mechanism for selling goods. The mechanic may find the source of the trouble in the "gas," the carburetor, the lubrication, the wiring, the spark, the timing of the valves or of the magneto, loose bearings, worn pistons or accumulation of carbon in the cylinders. Without going too much into detail, we may point out that, in the sales force, salary corresponds to the "gas," courtesy and tact to lubrication, the stimulus of competition to the spark, and stale ideas or obsolete methods to carbon in the cylinder heads. As to the rest, anyone interested may make his own analogies, except that we shall add that, if the sales force is to be speeded up, it needs more gas, plenty of lubrication, and a good hot spark; and that the timing

must be perfect, and all lost motion taken out. If it were not for the bringing of a touch of levity into what is intended as a serious discourse, we should call attention to the fact that the carburetor is a device for mixing hot air with the gas. Encouragement and sympathy are as important as commissions.

The responsibility of the salesman.—While the work of the salesman is planned for him by the management, much as the task of the workman in the shop is laid out by the planning department, the workman in the shop is responsible primarily for following instructions, while the management assumes entire responsibility for the results. The salesman, on the other hand, is practically allowed to choose his own methods, and is practically held responsible only for results. He is trained, of course, in the use of the methods which have been found most effective, but the actual detail of making a sale is something that cannot be determined in advance. Since the salesman is held responsible for results, he must be given a corresponding amount of discretionary authority, within certain limits, and must feel that the house will "back him up."

Energizing the selling force.—Perhaps the strongest instinct that can be appealed to and awakened among those who have work to do is that of competition. When a lively spirit of competition enters into even the dulllest kind of work it is turned into play. It is probably true that rarely, if ever, is anything exceptionally good accomplished unless the doer is competing, either with others or with himself—unless he is trying to break a record of some kind, or to set a new one.

So the salesman is given a "sales quota" to reach, with no penalty attached for exceeding it. If the quota is high, he regards it as a challenge.

Since the "quotas" of the different territories are equitably determined in view of market conditions and the ability of the salesman, it is possible to institute salesmen's contests, measured in percentage of quota. In other cases, a point contest may be instituted, each point representing a certain amount of sales. The differences in the territories, or in the ability or experience of the respective salesmen, may be equalized by weighting the points. The contest, for example, may be for 100 points, and one contestant may be credited with a point for each \$100 of sales, while another, with better territory, may be given a \$200 point. The rewards offered may be either honorary or pecuniary, but should be both, since the underlying reason for the institution of a contest by the management is the making of an extra profit for the house. The salesmen who contribute to the making of this profit, while they may covet the honor of winning, cannot but feel that if honor is all they get, they are not getting a "square deal." The first contest may succeed with no other prizes than a ribbon and a name in the list of the winners, but the second contest for such prizes is likely to develop less enthusiasm. It is found best, accordingly, to reward the winners of a salesman's contest by giving them either cash prizes or increases in salary, in addition to whatever the honorary award may be. One of the most sensible methods of rewarding the winners is to send them as delegates to salesmen's conventions, with expenses paid. The salesman's success is

widely advertised, and both he and the house profit by the new outlook and new ideas the salesman gets from the addresses he hears and the other salesmen he meets and talks to.

It has become a practice of many houses to arrange for annual conventions of their own salesmen. The policies of the house may at such times become more firmly crystallized and a common viewpoint established for the salesmen when they are again dispersed to all parts of the country.

Communications between the house and the salesman.—Consistency in the policy of the house, in its dealings with the public, and also the personal efficiency of the salesman, are promoted as noted above, by the conventions and meetings of various kinds where the salesmen and managers come together. Very similar ends are attained meanwhile by the printing and circulation of the "house organ," a periodical designed partly as an advertisement to the public, or to dealers, but which serves also as a means of keeping the salesmen informed of whatever may be of interest or practical value in their work. Besides the house organ, the salesman receives letters—either personal or form, or both—from the office, containing greetings and words of encouragement from the manager. The salesman is made to feel that although absent he is not forgotten. There is no overestimating the cheering and stimulating effect such letters may have upon him.

The "personality of the house."—A highly sensitive business organization develops a personality of its own and comports itself consistently wherever it may be.

Just as a man gives evidence of his character and breeding wherever he goes, and is not quiet in one place, boisterous in another, or clothed modestly at one time and flashily dressed at another, so the business house faces the world with a steadfast demeanor, which is recognized as characteristic at any time or place. This policy or nature of the house is reflected in the deportment of its salesmen. The representatives of an investment house will not be conspicuous for their waist-coats and diamonds, nor should we expect to see a promoter of prize-fighting or horse-racing garbed like a clergyman.

CHAPTER XX

SELLING

(Continued)

DISTRIBUTION

The problem of distribution.—By distribution we mean the allocation and transportation of goods as between producers, dealers, and consumers. The problem of distribution, accordingly, involves (1) the means of allocation and (2) the means of transportation and delivery (a) to intermediate dealers and (b) to consumers.

The ideal system of distribution is the one under which the movement of the goods is accomplished at the least economic cost. Other things being equal, the cheapest way is the most direct way—from producer to consumer, without the intervention of dealers (or “middlemen”). Other considerations, however, are often far from equal, and the much-maligned middleman in many cases still performs an economic service—in many cases, but not in all.

The course taken by goods in their movement from producer to consumer—sometimes direct, sometimes via merchant, jobber and retailer, is known as a “channel of distribution.”

The disposal of goods.—In the early stages of industry distribution of goods was made by the producer direct to the consumer. Later, the merchant, the jobber, the

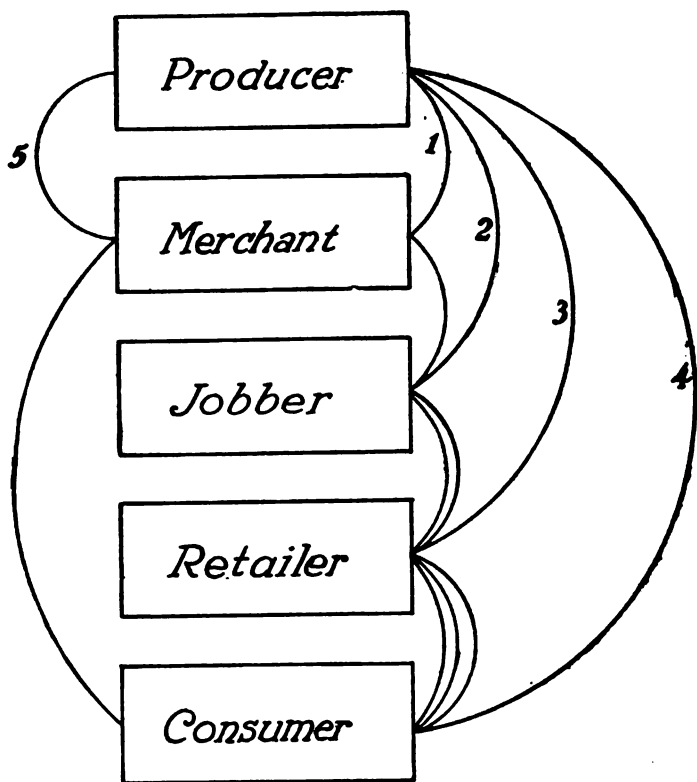
wholesaler, and the retailer intervened between these principals, the assumption of their tasks being justifiable, from an economic standpoint, because of the difficulty of communication between the producer and the consumer. In these most modern days, when ease of communication and facility of transportation are re-established (although the producer and the consumer may be farther apart, with respect to geographical considerations, than ever before), the tendency is to return to the original plan of selling goods "direct to the consumer;" except that the economy which characterizes a functional division of labor makes necessary in many cases a single merchandising agency, which may be the sales department of the producer, or may be an independent concern.

The following chart will serve to indicate the manner of distribution under present-day conditions, with respect to certain representative commodities and selling systems.

The "regular" trade channels.—What may be called the regular channels of distribution are those which are numbered (1) and (2) on the chart. Through these channels move the bulk of the so-called staple commodities, many of which are unbranded. When an article is branded and advertised the tendency is distinctly toward selling directly to the retailer, if not directly to the consumer.

The merchant.—The merchant, whom we have placed next to the producer in the chart, is distinguished from the jobber in that his business is more regular, especially with respect to his source of supply; the jobber, as his name suggests, being a dealer who specializes in "job

lots"—the whole output of a given factory, or entire stocks of goods which he distributes to other dealers.



LINES OF DISTRIBUTION

(1) Groceries. (2) Cotton goods. (3) Chain stores. (4) Mail order. (5) Automobiles.

The merchant, when his purchases are regular—that is, when he purchases regularly from the same producers and resells to the same dealers or consumers—becomes in

reality, if not in name, the selling agent of the producer and the purchasing agent of the dealer or consumer.

We see, for example, the commission merchant who distributes to retailers and consumers the "produce" shipped to him by truck farmers, who rarely have the facilities for reaching the retailer or the consumer directly. The commission merchant will sell the produce consigned to him, charging perhaps 10 per cent commission, besides expenses (the bulk of which are transportation charges and local drayage). Acting in this capacity, he is clearly an agent of the producer. Many so-called commission merchants, however, purchase produce outright quite as often as they handle it on a commission basis.

The merchant, then, may in many cases be regarded as being the agent of the producer, or his business may be so closely identified with that of the producer as to be, in name as well as in fact, the sales department of the producer's organization. Sometimes a selling corporation is formed to handle the output of a company, under the same ownership but under separate or specialized management. In some fields, as in the dry-goods line, commission houses take entire charge of the producer's overhead, advancing money on sales made, guaranteeing the customers' accounts and attending to the collection thereof.

Exclusive agencies.—An exclusive agent is an agent of the producer or prior distributor, who has the sole right to make sales of the product in question within a specified territory. Under the exclusive agency system it is customary for the producer to appoint some well-

known merchandising concern as its agent for a district, which may comprise a State or a group of States, local agents then being appointed by the State or district agency. The principal agencies may receive a commission on sales ranging from fifteen to thirty-five per cent, which commission is shared by the local agency which makes the sale. Any sale made within the district, even by the producer himself, will be credited to the district agency, and by the district agency in turn to the local agent in whose territory the sale originated.

A large part of the automobile business of the country is conducted under this system.

The exclusive agency usually pays half or all of the local advertising expense, while the "company" pays for the general or national advertising.

Branch offices or stores.—Instead of appointing dealers as agents, the producer may establish distributing stations known as branch offices or stores. The channel of distribution, with respect to handling and transporting the goods, differs but little, if at all, from that of the agency system, but there may be a variation in the method of recompensing the sales managers and salesmen, who may be employed on a salary basis, or may receive a commission or bonus in addition to a fixed salary.

Under this system many products can be sold directly to the consumer—particularly, bulky or expensive articles, such as farm machinery, tractors, automobiles, or pianos—articles which are expensive enough to make a single sale somewhat important, or articles which require specialized salesmanship or service to the user. For some lines—particularly "novelties"—house to house canvass-

ers may be employed, but this method is less frequently used by branch offices than by special agents.

The general purpose, however, of branch offices of the types which we mean to include in this classification, is merely to facilitate the movement of goods to the regular retail dealers, with the exception of certain articles or products which for special reasons are better sold directly to the consumer.

"Direct" to the retailer.—In such businesses as that of the meat packers or biscuit makers, whose continued success depends upon care of their products until they reach the consumer's hands, it has been found profitable to establish warehouses, with cold storage and other facilities, where the quality can be closely guarded and sales made in small quantities to retailers as needed. Armour & Company, Swift & Company, and the National Biscuit Company furnish familiar examples of direct-to-retailer selling. Manufacturers of non-perishable goods also have entered the direct-to-retailer selling field—one will have, perhaps, a "complete line" of haberdashery, so that the handling of his "family of products" in a retail store means a sales of considerable importance, justifying the employment of traveling salesmen to keep orders filled and to induce other stores to put in the same "line."

Many jobbers refuse to handle the goods of factories that sell to retailers, just as many retailers will not handle the goods of houses that sell to the consumer, so that the manufacturer must consider carefully the possible results of closing against his products the doors of many markets.

Manufacturers' retail stores.—Many manufacturers,

notably shoe manufacturers, have established retail stores in practically all of the larger towns, with the object of saving the profit otherwise taken by intermediate dealers.

It is doubtful whether there is any intrinsic or essential economy in the retail store maintained by the manufacturer, since, from the point of view of the public, it does not matter who pays the cost of distribution—whether the retail store bears the manufacturer's name or some other dealer's name, the manufacturer being in this case a dealer in his own products. There is, however, almost invariably a practical economy, facilitated by the system, but not inherent in it; for the same economy, conceivably, could be effected without the system. Waiving this technicality, the advantages or savings in actual practice are:

1. Elimination of local competition in the same goods, relieving the community of the support, possibly, of a number of dealers.
2. Intensive cultivation of the local market—an advantage to the manufacturer, if not to the public.
3. Increased efficiency of advertising.
4. Price maintenance.
5. Close relations between consumer and producer, enabling the manufacturer to foresee and prepare for changes in demand.

It will be noted that the manufacturer who adopts this method of disposing of his products must be prepared to carry it out with vigor, since regular retailers are notoriously jealous of any invasion of their field by manufacturer or wholesaler. A failure of the plan would entail a loss of prestige—one of the greatest assets of a busi-

ness, closely allied to good-will. The dealers having been antagonized and alienated, the manufacturer would find it more or less difficult to resume profitable relations with them, especially as they would meanwhile have arranged for the handling of competitive goods.

The question of whether to dispose of the output through branch stores or exclusive agents, or through regular retailers, will depend upon whether the goods in question are what is known as a "shopping" or a "non-shopping" line.

Most toilet articles, for example, as well as collars and ties, handkerchiefs and other minor articles of apparel, are not purchased until they are needed for immediate use, at which time, however, a supply for the future may be purchased. The buyer will not go far out of his way to secure any special brand, although he may prefer one brand to another. Such lines, then, should be distributed as widely as possible, in as many retail stores as possible.

On the other hand, articles which, in the main, are more expensive, and which the purchaser will buy in advance of his immediate need—such as a suit of clothing, or even a pair of shoes, are handled best by means of branch stores or special agents. When good-will for such articles is secured it can be retained, and the exclusive agent or dealer can afford to spend more for advertising, service to the consumer, and any other means, whereby good-will may be secured and retained.

Chain stores.—Branch stores, referred to in the section above, are each directly dependent upon a central, or common, source of supply and are designed primarily as a means of saving, to the manufacturer and to the

public, the extra selling cost which attaches to goods in the hands of intermediate dealers. Chain stores, as distinguished from branch stores, are relatively independent units under one management, designed to facilitate economy in merchandising through the savings which can be made by standardization of methods and in buying goods in large quantities, often from local sources of supply.

Chain stores dealing in groceries or other food products—goods which are more or less bulky and in some cases perishable, and which are, moreover, to be selected with a view to satisfying a demand which is largely governed by local customs or prejudices, are most likely to be confined in their territorial scope to a single city or locality. For a chain store or any other store to attain the completest success it is necessary that it secure a large and fairly constant patronage. It cannot do this unless it is able to supply not only the principal needs, but also the minuter needs of its customers, with respect to the goods which such a store may be expected to have in stock. The customer prefers, so far as possible, to buy all his groceries, for example, at one place, and if he must go from the chain store, at which he buys staples, for instance, at a low price, to another store to supplement his purchases and satisfy his minuter needs, his goodwill is not secured. He may prefer to pay a slightly higher price elsewhere, in order to save himself the trouble of going to more than one place. An intensive study of the market, accordingly, is necessary, which means an intensive study of the buying habits of each community; and the chain of stores may be extended with safety only to those sections of the market of which

such an intensive study is practicable. These considerations, as we have observed, apply with particular force to stores which deal in perishable or bulky products, for if these are not disposed of they are either lost outright or transferred to another sales station at a considerable expense.

The restriction of stores of this class to certain localities is furthered also by the fact that in a single large city and its environs communication between the several stores in the chain is far easier than it is where they are widely dispersed. The manager can keep in constant touch with each unit, by having a telephone on his desk and a motor at the curb. The allocation of stock is also a simple matter, since a motor-truck can deliver supplies from a central warehouse wherever and whenever they are needed, or can adjust the holdings of the different stores by moving goods from one to another. Where it is possible thus to equalize the stocks in the various stores in the chain, the investment may be greatly reduced.

It may be noted also that the good-will of the customer is held not only by the individual store in the chain, but by any store bearing the name. When a customer "moves," he is far less likely to leave the city than he is to take up his abode in another section of the same city. Finding near-by a store with the familiar name and the same appearance, he transfers to it his patronage and his good-will. It is in recognition of this trait of human nature that all the stores of one chain are painted red, of another green, and of another, yellow. The customer in a strange locality feels a definite pleasure of recognition upon seeing the well-known name and color. Uncon-

scious obedience to "force of habit" is also a factor to be considered.¹

The considerations which are effective in restricting the scope of chain stores which deal in perishable products apply with much less force to those handling goods which are not perishable and which meet less specialized needs. In this class, the most familiar examples are the five-and-ten-cent stores, the United Drug stores and the United Cigar stores.

Location of chain stores.—Undoubtedly one of the things which has helped to make chain stores successful is their location, in each instance, at a strategic point. There is, of course, no reason why strategy of location should be a peculiarity of the chain store, but it seems that the advantages of location have been more keenly realized by chain store managers than by most others. This is explainable, in part, by the fact that the chain store manager has learned by experience the requirements of a good location, and has learned the methods by which the best location may be ascertained. Among the things that must be known, when a given site is under consideration, are: the number of people who pass each day—men, women and children; where they are going; their occupations; and their purchasing habits or requirements. The

¹ Incidentally, we observe that the instinct by which we turn almost unconsciously into familiar places is the psychological explanation of the general similarity in appearance between wholly unrelated (as to ownership) places of business, such as ice-cream parlors, barber shops, "lunch" rooms or boot-black stands. Each individual enterprise profits by obtaining a share of the increased patronage which the group as a whole receives as a result of this appeal to habit. "The store that's different" is a "slogan" which usually makes a very poor psychological appeal. The "difference" is something which should be kept under cover, attention being directed specifically to whatever particular advantages are offered.

numbers can be found out almost with exactness; the other questions can be answered only with a partial or approximate accuracy.

It is true also that the superior financial position of the chain store organization as compared with that of the average small retailer enables the manager to secure a site which requires an immediate outlay beyond the capacity of the individual, even were he aware of its desirability.

Standardization of methods, equipment and stock.—It is quite obvious that chain stores have a unique advantage over a corresponding number of unrelated establishments, in that the system makes possible a standardization of equipment and stock which permits purchasing in large quantities, with a minimum of reserve to be kept on hand. Since the goods, including their packages, are standardized, it is a comparatively simple matter to work out the most efficient methods of handling the goods, and to apply these methods in each individual store. Consequently, there is economy not only in the doing of the routine work but also in the training of new employees, who may be taught the routine methods with a minimum of supervision by a high-salaried manager.

Growth of the chain store movement.—An indication of the strength of the chain-store plan in modern retailing is seen in the recent organization in New York City of the Chain Store Grocers' Association, the membership including the managers of eighteen chains, representing a total of five thousand retail stores. In another field—that of the drug business—the gross sales of the United Drug Stores in 1917 were over \$40,000,000; of

which \$22,000,000 was the actual quota of the Liggett group, comprising 175 stores.

Obviously, such statistics as these are not encouraging, to say the least, to the independent retailer. The wholesaler, too, is menaced by the growth of the chain-store system, for the chain store is often in a position to absorb the entire output of a manufacturer or other producer, leaving the wholesaler with nothing to do.

The following notice, a bulletin of the Montana Wholesale Grocers' Association, sent recently to its members, illustrates the attitude of the dealers in control of the "regular" trade channels toward interlopers—chain stores and other anti-middleman systems.

"The Wholesale Grocers have done much to co-operate with the Government, and the attitude of the Government has been to confirm the jobber as the logical distributor of food.

"The manufacturers are coming more and more to recognize this truth.

"The American Sugar Refining Company has again changed its policy, and is now marketing its products through the wholesale grocer.

"Now is the time for us to work hand in hand with both the manufacturers and the retailers for two reasons.

"On one side, we have the packers coming into the field to take the place of the jobber.

"On the other hand, we have the chain stores that will continue to grow unless checked by the retailers, and the individual retailer cannot do it unless the wholesale grocer is willing to co-operate with them in every possible way.

"The jobber should put forth every effort to support, encourage and build up the retailer who is willing and shows a disposition to co-operate with him.

"The jobber must seize each opportunity to render every service possible to the manufacturer and the retailer."

Co-operation between dealers, however, unless it has as its object the lowering of costs or the betterment of service to the consumer, is of very doubtful value. With respect to its ethics, such a co-operation is questionable, and the practicality of obtaining more than the merest tempo-

rary benefit is even more so. We must, nevertheless, credit the regular wholesaler and the regular retailer, in their antagonism toward chain stores and mail-order houses, with a sincerity of purpose; each undoubtedly feels that his way of serving the community is the best one. Which is right, is for the public to decide.

The mail-order house.—The mail-order business, as is well known, is of comparatively recent origin, and has received a great stimulus through the establishment of the parcel post.

The mail-order house represents the extreme development of the present tendency to sell directly to the consumer—especially if it manufactures or produces its own goods. Many factories market their goods exclusively by the mail-order system; other concerns, of the department-store type, buy most of their stock, but manufacture certain articles themselves. Other articles are made to its order, and bear a distinctive trade name—rarely, however, one that identifies the article with its origin. In fact, a most interesting situation is to be observed with respect to the names borne by mail-order articles, indicating, as they do, a number of compromises. The situation may be outlined as follows:

1. The mail-order house must handle all grades of goods, and must justify itself by offering even its highest grades at less than the regular price.

2. The manufacturer of a standard article, although he may be glad of the chance to sell to the mail-order house in large quantities at a lower-than-usual price, can not afford to spoil the market for his branded articles by allowing them to be identified as having been purchased

through a mail-order house at a cut price. He is obliged, therefore, to refuse the use of his regular trade-mark, and also to make such changes in the form or appearance of his product as will prevent it from being identified with his regular output.

3. The consumer, also, desires to conceal the fact that he deals with a mail-order house, especially if he lives in a small town. So many things have been said about mail-order houses, by his friends among the retailers, that he cannot buy from them without a sense of guilt and without incurring the danger of retaliation on the part of the local dealers. His conscience in this case, as Freud would explain it, is a "social fear."

The result is that the mail-order house must choose a new and often apparently meaningless name to be used as a trade-name for the article in question—something like "Seroco," for example, which can be interpreted only by the initiated.

Advantages of mail-order selling.—Among the principal economic advantages of the large mail-order house are the following:

1. Goods may be purchased in large quantities.
2. A complete stock may be kept, with respect to classes of goods and grades within the classes.
3. An expensive location, as in the center of a shopping district, is not necessary.
4. Goods may be selected by the consumer at his leisure, from a perusal of the catalogue.
5. The work of the day or of the week is regularized; there are no "rush" hours; the employees may be kept busy during their entire working periods.

6. Because of the possibility of forecasting demand, since the customers of the house are widely scattered and are as a whole, much less affected by changing conditions than are groups in a single district, the necessary quantities of each article or product can be kept in stock, with a comparatively small reserve. Consequently, the latest or freshest goods, most satisfactory to the consumer, can be supplied, and the investment in stock is at the same time kept at a minimum.

Disadvantages of the mail-order system.—Despite the many economies inherent in the mail-order system of selling, the profits, as a rule, are not large in proportion to the investment required. This is largely because of the enormous advertising expense, which causes the average selling cost to run close to 20 per cent of the gross sales.

The antagonism of local dealers and the distrust of the public are also to be considered, although these are not to be looked upon as being disadvantages inherent in the system.

There is an economic waste in the shipping of goods in small quantities to points at a distance. This is partly overcome by the establishing of district warehouses throughout the country, from which the more bulky goods are shipped to the consumer.

Mail-order sales methods.—The larger mail-order houses of the department-store type employ no salesmen and do little if any newspaper or magazine advertising, but do their selling almost exclusively through their large illustrated catalogues, supplemented by circulars and price-lists of special classes of commodities, and followed

by numerous form and personal letters. The mail-order house is never too busy to write a letter.

An illustration of the cumulative effect of the follow-up letter is seen in the case of a young negro in Texas, who had purchased a typewriter from a mail-order house—a not very practical machine, costing \$3.75, with the alphabet on the rim of a rotary disc.

"What is that you have there, Richard?" he was asked.

"Dat's what dey calls er typewriter," he replied.

"What need have you for a typewriter?"

"Well, I kin write a letter wid it in a day, an' I don't have nothin' else to do Sundays."

"But how did you ever happen to think of buying such a thing in the first place?"

"Well, suh, hit was jes' like dis. Mister Montgomery Ward and Company, dey knowed I had done sent fo' one o' dey catalogues and never had bought nothin' f'um em yit, so dey written me a letter 'bout it; an' after so long er time dey written another letter, an' dey kep' a writin', an' kep' a writin', till I finally made up ma mind ef I didn't buy nothin' f'um em dey might think I wasn't no business man."

The large mail-order house is more at the mercy of the public, perhaps, than is almost any other form of business enterprise. Having no salesmen, no advocates except its own satisfied customers, and doing no general advertising with a view to influencing public opinion, its only hope of continued success lies in gaining and keeping the goodwill of the public, by giving satisfactory goods at low prices and by correcting faithfully each and every cause of complaint. A single established case of unfair dealing

would be seized upon avidly by its enemies and advertised far and wide. Honesty is not only the best policy for the mail-order house; it is the only policy.

Mail-order departments of retail stores.—It might seem at first thought that the addition of a mail-order department to a store which had an established over-the-counter trade should be exceedingly profitable, the extra sales resulting representing almost clear gain. This, however, does not prove to be the case, although, of course, many retail stores actually do an immense mail-order business. Where such course is decided upon, one or the other of two things must be done. Either (1) a separate stock must be kept from which mail orders are to be filled, or (2) orders must be filled from the same stock, necessitating practically the same procedure in filling each order as is followed in ordinary purchases by a customer. The expense incurred, accordingly, includes the cost of the employees' time ("shoppers" and sales-clerks); the extra handling of the goods, since disposing articles for retail sale is something that requires not a little care; and the extra bookkeeping or accounting costs. Added to these must be the share of the burden of fixed charges on the store and equipment, which charges are necessarily high, since the retail store must be located in a favored shopping district.

If a separate stock is carried, it would seem to be expedient to conduct the mail-order department as a separate business, in a less expensive and more advantageous location.

Mail-order competition.—The invasion of the local selling fields by the mail-order houses and chain stores is

keenly resented by the local retailers, especially in small communities, where personal as well as business relations often exist between the dealer and his customers. The local merchant feels that he is rendering an indispensable service and that he is therefore entitled to the full support of the community. Not only does he keep a supply of goods which his customers must have, but he may, in rural districts, purchase their farm and dairy products, and may grant them liberal terms of credit, "carrying" them until their crops are sold. When he sees his customers taken away by the catalogue house—continuing to buy from him the articles upon which there is the least profit, but sending to Chicago for the rest of their supplies—he cannot help feeling aggrieved. It is not to be wondered at that the merchant will sometimes resort to somewhat unethical retaliatory measures, tending to discredit the mail-order house and its goods. Throughout the South, for example, it is commonly suspected that Montgomery Ward is a negro, Sears Roebuck a negro, and Kress a negro, intimations to this effect being circulated judiciously by local retailers.

Since the mail-order houses and chain stores can offer certain advantages in price and convenience which cannot be duplicated by the local retailer, it is futile for him to fight them with their own weapons. He must oppose them by finding new ways of giving individual service to his customers, and by making that service more desirable than the service of the catalogue house, even when the difference in price is taken account of.

Further than this, as Paul E. Derrick points out,¹ he

¹ *How to Reduce Selling Costs*. Geo. Newnes, Ltd., London, 1917.

may take hope from the fact that as the big dealers grow larger they feel the competition of each other and must advertise so extensively or adopt such other means of self-preservation as to increase their own selling costs to a point where they may lose much of the advantage over the small dealer which they had previously possessed.

The delivery problem.—In the distribution of goods there are few problems of greater interest than that of how to transport the goods from the point of production to the consumer, and especially of how to make delivery of the goods as between the retailer and the consumer.

The great waste involved in the present systems of retail distribution is in the duplication of service which is almost invariably found. The delivery wagons of many dealers pass each morning or evening over the same routes, or at any rate over the same streets, stopping at the same houses, each leaving a package from the dry-goods store, a box of groceries, a bottle of milk, or a bundle of laundry. It would not be so distressing if only it could be arranged that one grocer's wagon, and one milkman's wagon, for example, should deliver all the groceries and all the milk to a certain street; but we see numerous wagons on the same street, stopping even at the same houses, carrying identical kinds of commodities.

A saving is effected when shoppers carry home their own packages and regularize or consolidate their purchases in order to save extra delivery trips. The fundamental remedy, however, seems to lie in the development of delivery systems comparable to the street railway transportation systems, whereby the city will be divided into delivery zones or districts with regular service, once

or twice daily, given by a single transportation concern. Some progress has already been made in this direction, but the idea has scarcely as yet even reached the experimental stage. It seems clear, however, that some such community delivery service, at least for similar classes of goods, must eventually be worked out.

"Door delivery."—A movement is also on foot for the establishing of a system of "door delivery" for goods shipped by freight. The wastefulness of the present method will at once be apparent to anyone who considers the fact that each consignee must send a conveyance of some kind, perhaps from miles away, to fetch even a small package from the freight warehouse. If the transportation charges were made to include those of door delivery, the transporting railroad or other company would maintain motor trucks which would make these deliveries, each truck carrying a full load and going to many consignees, probably, in the course of a single trip.

"Highway freight."—With the development of the motor truck and the building of good roads, it is possible in many cases to reduce delivery costs by making shipment via "highway freight." Goods carried on a motor truck can frequently be sent immediately to their destination, with a considerable saving in the cost of rehandling. Thus on short hauls the motor truck will easily justify itself. The result of this new method of transportation will probably not injure the railroads. Motor trucks will not be in competition with the railroads except in special instances, but their peculiar function will generally be to supplement the railroads as feeders and to relieve the railroads of unprofitable short-haul business. Probably an-

other function will be the specialized handling of goods, like fish and other food products needing quick delivery to markets.¹

Reducing distribution costs.—It would seem improbable that the public will endure much longer the economic waste which results from the present haphazard methods of distribution. The excessive cost of distribution which is closely allied with, or is rather a component of, the high cost of selling, can be remedied, it would seem, only by very radical changes in the industrial organization.

The evils upon which attention must be concentrated are: futile expenditure of effort, and duplication of effort. By the first we mean, effort that is expended in the attempted sale and distribution of something which the public does not want or need, or which it is already supplied with; by the second we mean, the employment of many separate delivery systems where fewer would suffice, if operated under a single management.

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¹ See *System*, November, 1919.

CHAPTER XXI

ADVERTISING

Psychological principles of effective advertising.—

The growth of advertising is one of the marvels of our new industrial civilization. It is, on the one hand, a result of competition in the markets, due itself to the constant doubling and redoubling of output from the manufactories and to the ready means of transportation, which has kept pace with that increasing output. It is, on the other hand, a cause acting upon the consumer, ever creating a fresh demand for commodities, and thus reacting upon the manufactories and serving to increase their output. Production and advertising act, react, and interact upon each other in so complex a manner that their exact relations can hardly be determined. We find here a concrete example of the formula: (a) Owls lay eggs. (b) Eggs hatch into owls.

An advertisement is merely a notification to the public of the name, uses, merits, or price of certain goods offered for sale—publicity is its only absolute essential. Advertising is the business of making such advertisements. The card on the opposite page comes within the range of the definition of an advertisement.

Now this is about as bad an advertisement as it is possible to construct. Messrs. James Peters & Son will hardly increase their sales by so much as a single hat or a single box of corn salve as a direct or indirect result of

such a notice. Contrast with it almost any magazine advertisement of the Quaker Oats Company and you will see the difference between an advertisement and a *good* advertisement. The sole aim of an advertisement is to

JAMES PETERS AND SON

Dealers in general merchandise, hats, shoes,
notions, staple and fancy groceries, patent medicines,
oils, paints, varnishes, window glass, and everything
for the household

West Side of Square

Racoon Creek, Arkansas

enable the seller to dispose of his goods at a profit—if it does not contribute to that end it merely represents wasted time and money. Successful advertising is as much a science and art as any other profession, and the principles may be learned and applied in much the same way as those of any other business—that is, by assiduous study and painstaking practice.

Properly understood, advertising is a special phase of salesmanship, being, in fact, an extension of the salesman's opportunity of selling goods to an individual buyer with whom he comes in personal contact to the broader privilege of convincing whole masses of consumers to buy the particular commodity which he has to offer. In general, therefore, the methods of appeal discussed in the chapter on selling will hold good in the business of adver-

tising, but the new factors entering into the problem, due to the separation in time and place of seller and buyer, demand careful investigation and discussion, in order that the proper readjustment of emphasis may be made.

As in general salesmanship a ready familiarity with human nature is of first importance, so in advertising an accurate knowledge of the laws governing human thought, feelings, and activities must be so well understood that they can be applied unconsciously. Psychology is the basis of the whole structure in either case, but there are many paths of divergence. In individual or personal salesmanship, for instance, each customer is a separate and distinct problem to be solved by the personal equation method, whereas in advertising the individuals will be found massed into thousands and hundreds of thousands, and cannot be reached except by methods of universal appeal. The attack against these masses must be made at their most vulnerable points by a challenge to self-interest, self-love, desire for ease, imagination, self-respect, or to whatever other human feelings can most easily be touched. Thus the advertiser becomes a specialist in his own somewhat narrow field of applied psychology. He must know what motives are most readily appealed to in the class of people to whom in each advertisement he may be addressing himself, and he must know, furthermore, how to make that appeal effective. His methods of offering for sale a stock of damaged shoes and a late-model car, price \$5,000, would be quite different. In one case *price* would be his key-note, whilst in the other he would attempt to create an atmosphere of quiet elegance suggestive of wealth and exclusiveness.

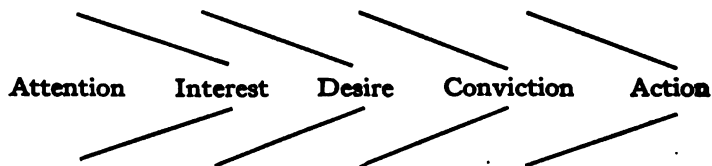
Under modern business conditions buyers are not in the habit of running over one another to make their purchases, even when they know their own desires, which they seldom do. The benevolent hand of that great economic missionary, the advertising man, must usually point them to what they want and show them just where and how to find it. It is true that the consumers know beforehand that they must have food to eat and clothing to wear, but they do not know just *what* food and just *what* clothing. Though they are not often aware of it themselves, they are waiting for some one to overcome their inertia by a suggestion.

Now the advertiser's task would be an easy one if he had merely to say: "Buy Z collars." In this wide-awake age of ours a score of other advertisers will be saying the same thing about a score of other makes of collars, and saying it more effectively. One will attract attention by illustrations of distinguished-looking gentlemen and society chaps who know what is what, all wearing Y collars and looking the very embodiment of easy grace or urban magnificence. A second will carry his missionary work a step further—in appeal to certain classes—and close with a sly suggestion like "Costs no more!"

Like most fundamentals, the basic psychological principles of the art are simple enough to be comprehended after a clear statement; the difficulties will be encountered later with the endeavor to apply the abstract principles to the actual business in hand. The *principle* of the steam engine is understood by the ten-year-old boy—the application has been one of the biggest problems in industrial history.

The advertiser's problem is to induce purchase: if he does that, he succeeds; if not, he fails. The process of inducing purchase may be aptly illustrated by a rough diagram, wherein the prospective purchaser (at the left) and the advertiser are to be considered as playing a friendly little game.

The game starts with the purchasers halted at Attention. Then the advertiser manoeuvres so as to lead—not drive—his crowd in the direction of the arrow, till they finally enter the area of Action, when the game is won.



The advertiser expects to lose the very great majority of the games because of the wide openings at the sides, through which the quarry is prone to escape. A slip on his part inevitably results in a stampede from the areas of influence to the outside, whereupon the game begins anew.

We are now about to consider how most effectively to attract attention, arouse interest, suggest a desire, effect conviction, and force action.

What attracts attention.—Recall a dozen objects, people, or situations that drew your attention as you walked along the street today, and find out for yourself, if you can, why those particular objects, or people, or situations, rather than others, impressed themselves upon

your mind. The stimulus in some cases was due to the unusual—you would not have failed to remark a man walking on his all-fours; others penetrated through the threshold of consciousness because of the contrast they presented—a big, black dog, say, playing with a tiny white fice; others, it should be, claimed a share of your attention by reason of their symmetry of form and harmony of color—a pretty face, for instance; others still owed their power to association—a picture of a camping party reminded you of your last summer's week in the woods.

Here, then, we have the groundwork to build upon: The more unusual, the more strongly contrasted, the more closely associated with past experiences, the more symmetrical, or harmonious, or rhythmic the objects of attention may be, the more forcefully will they drive themselves into the mind.

What attracts favorable attention.—The advertiser makes use of these principles in every advertisement he writes; else amid the hundreds of others his would never be read. A word of caution is needed just here: the beginner must not strain his energies toward extremes—not every effort that attracts attention will produce good results. A picture of two men scuffling for possession of a carton of breakfast cereal might challenge your attention, but it would repel because of the subconscious feeling that you, in some way or other, were being associated in the advertiser's thoughts with men of that ilk. The images, whether illustrations or letter press, must needs *please*; otherwise more harm than good befalls. This is the reason why advertising pictures represent humanity

as healthy, joyous, prosperous, well-dressed or good-looking. Never should the sick, the wretched, the failures, the ill-dressed appear—*except to be contrasted with their opposites*, and even then the emphasis should always fall on the pleasant side of the picture. The looker or reader must be led to identify himself (at least potentially) with the fortunate classes of men and women.

Furthermore, it is not enough merely to please. There must be some relevancy between the attention-compelling part of the advertisement and its primary purpose—the sale of goods. A picture of a pretty girl—if she be pretty enough—will attract attention anywhere, and the effect is always pleasing. This would be a poor way, however, to advertise a concrete mixer in a trade journal. The image leads away from the concrete mixer rather than towards it—a fatal blunder.

What arouses interest.—While the diagram and outline seem to indicate that attention and interest are two separate and distinct entities, yet in actual practice interest follows attention in a flash or not at all; there is no appreciable interval of time elapsing between the two, and they seem to be synchronous. In fact, it is not going too far to say that arousing interest is not a very different process from sustaining attention, as attention cannot be held unless interest wakens.

Human interests, you may be inclined to think, vary so with individuals that a catalogue of all of them would assume the proportions of a dictionary—and so it would. Despite the truth of this, however, we shall not find the working list so very formidable. As the thousands of species in the animal world can be grouped into genera,

or as automobiles, carriages, coupés, victorias, wagons and pushcarts can be classed as vehicles, so the various objects of human interest may be generalized.

Curiosity, one example.—An advertiser once inserted a large “?” and nothing else in a prominent position of an evening paper. What effect did it have? Why, it certainly compelled attention—there was scarcely a reader who could have failed to notice it. It did more than that: it aroused “that low vice, curiosity,” even in the cultured breasts of those readers who were nettled by the impudence of the appeal.

Curiosity is a powerful instinct, when it can be stimulated. It is, however, too wayward and freakish an aid to rely upon exclusively, although the elements of it are certainly present in every interesting advertisement. Experience proves that the practical value of puzzles, tricks, conundrums, and jokes, formerly so common in advertising pages, is inconsiderable. They cannot be made to assume any vital relation between buyer and seller, unless puzzles, riddle-books, tricks and jest-books be the commodity.

The saner and safer bids lie along the lines of human interest—self-interest, that is to say, and this about sums it all up; for whether a man spends money upon himself individually, or upon his family, his firm, or his friends, he is in one sense making the outlay for his own benefit. Nor is this a sordid view to take of the matter, for in so doing he is making “their weal his weal and their woe his woe.” The point is simply this: considered economically, a man’s expenditure of money is made as upon himself, with self-interest as the actuating motive. Pa-

triotism and philanthropy appear to be the only exceptions, and they have not been commercialized.

Self-interest, comprehending within itself a whole host of other hyphenated self-compounds, aims at health, wealth, honor, ability, comfort, comeliness, pleasure. Here we have the catalogue of goods or evils in search of which the sons of men spend their days and nights and years in toiling and struggling, for which they descend into the depths of earth and sea, or scale the sky.

Talk on these things: if you can but *touch* these chords (there's the rub!), then interest is already engaged—they have been waiting for you this weary while. Whether you are advertising a sky-scraper or a new face-cream, yours will be an attentive audience.

Suggesting desire.—To pass from interest to desire the trick is only that of pressing the loud pedal—continuing the siren music in the same key and *tempo*. The interest must be sustained till the audience see themselves, in fancy, as possessing this or that commodity which seems so good a thing “to have and to hold.”

Behold yourself well again, like the man in the picture!

See how beautiful you can become!

Enjoy yourself among the lakes and mountains!

Here is a way to double your income!

Fragrance like a breath from Araby—what a cigarette!

The *easiest* easy chair that ever was!

These are examples of appeals to desire, not of actual advertisements, which must be more concrete, must follow the arrow straight into the area of *conviction* in favor of the particular good offered. The advertisement **now**

narrows and concentrates itself upon some of the superior advantages (not too many at a time, frequently only one), abandons the pure human-interest part of the field, which relies upon emotion for its effectiveness, and strikes straight ahead at the *reason* for choosing it in preference to all others. Some of these reasons, it may be, are not particularly valid, but the prospective purchaser is not infrequently swept off his feet by such phrases as: "Oldest piano makers in America," "Biggest shoe plant in the world," "Sold enough tires last year to encircle the moon," "Original makers of Tar Candy—all others are imitations." Appeals of this sort are well enough occasionally, as the superlatives of bigness hold a fascination for the human mind. They have, mostly, turned stale and hackeyed and, if employed at all, must depend for success upon freshness or novelty of treatment.

Buyers are becoming more critical and discriminating, too; why should I care whether a pair of shoes was made in the biggest or eleventh biggest factory in the country, so long as they fit, are neat in appearance, durable, and equitably priced? Milady, mayhap, prefers the stylish and *chic* in boots to all the other excellencies a shoemaker ever put into a piece of leather and paper.

Here, then, is a lesson worth learning. Purchasers of shoes need to be reminded that "our" shoes are the best, in material and workmanship, are warranted to wear a given length of time, are guaranteed to fit and to be comfortable; represent the best value for the money; and, finally, are up to the minute in style. These claims are sometimes supported by a testimonial from some prominent personage, but more frequently by cleverly written

little "selling talks" about this new process of leather treatment or that great foot-fitting discovery. Again, the prospective purchaser is told how he is protected by an elaborate factory-test against every flaw in the leather, and, yet again, milady may rest assured that her dainty foot, thus shod, will meet with an approving smile in the fashionable world—"our" expert boot creators will have seen to that.

Forcing action.—The reader, if he has been convinced, now stands in the attitude of waiting, he believes that he can hardly afford to be without the commodity. Delay means a gradual fading out from his mind of all his good intentions: they must speedily be translated into action, or the whole business must be repeated from start to finish. "Now," "here," and "do" are, as unobtrusively as possible, forced upon him. "Just sign this coupon and our agent will call;" "If you order at once, we will include, absolutely free, a five-volume set of Kipling;" "After September first we shall be compelled to advance the price;" and "There are only 93 of these suits left" are familiar types of the cruder efforts at forcing action.

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CHAPTER XXII

TRAFFIC

Distinction between traffic and transportation.—

“Traffic, properly the interchange of goods or merchandise between persons, communities, or countries; commerce or trade.”—*Encyclopædia Britannica*, eleventh edition.

Transportation, which is by some writers employed as a synonym of traffic, is rather an application of means to traffic: we may further classify the distinction by observing that the term traffic concerns itself with the *what* and the term transportation with the *how* of the subject.

The origin of transportation charges.—If we exclude from consideration the transmission of information and the movement of persons from place to place, we shall discover that the existence of the great network of railway and steamship lines connecting the most distant parts of the inhabited globe with one another and representing an annual business of billions of dollars, begins and ends with a very fundamental economic principle; namely, the difference in *place-value* of commodities. “On this hang all the law and the prophets.”

Were a load of cotton as valuable in the Texas cotton field as at the gin, whither it must be hauled before its first advance in form-value can take place, neither time nor labor nor money would be expended to move it; were the bales as valuable at the gin as the local town market,

it would never leave the gin yard; were it as valuable, in short, at any of its halting places on the way to the consumer as at the next stage, there would be no next stage, and the cotton would cease its globe trotting—does as a matter of fact, whenever one more trip will not increase its value beyond the cost of movement.

The relation between the carrier and the shipper on the one hand and the consignee on the other consequent upon the passage of freight from the shipper through the hands of the carrier to the consignee is a complex one. The gist of the situation is summed up, not so much in the question, "Who pays the freight?" as in the answer to the more vital questions, "How much are the freight charges?" and "On what basis are these charges to be levied?"

The reimbursement which the carrier is entitled to receive for services rendered, or, viewed from Jones's angle of vision, the price that must be paid to the carrier, soon appears as the backbone of the whole skeleton—a veritable bone of contention it has proved to be, this matter of rate-making and rate-fixing.

Whether this or that commodity can be shipped profitably from a point where its place-value is low to another point where its place-value is somewhat or much higher depends upon transportation rates. If X = the value of the commodity at the first point, Y = its value at the second point, and Z = cost of transportation, no movement will take place, unless $X + Z$ is less than Y . This is necessarily so; otherwise buyers and sellers (one or both) would be losing money on every transaction or else be engaged in merely "swopping dollars" for the fun of it.

The controlling principles of commodity movement may be illustrated by comparing the various markets to reservoirs, the commodities themselves to water, and the means of transportation to pipes interconnecting the reservoirs one with another. Filling a reservoir results in a movement of water from it through the pipes to other reservoirs which, if the process be continued, will cease only when the water has reached the lowest level furnished with an outlet pipe. Now, conceive each pipe to be fitted with a valve offering a resistance of, say, ten pounds to the square inch against the current. What will happen? Obviously, the passage of water will not begin till the pressure exceeds ten pounds to the square inch; will, in proportion as the water pressure is increased by additions of water, flow more and more rapidly; and, finally, will cease entirely whenever the valves close as a result of less than ten pounds of pressure against them. The valves are the counterpart of transportation rates, set at all degrees of pressure-tension, some just, others unjust; some reasonable, others unreasonable.

The basis of carriers' rates.—It is very evident, even from so hasty an examination, that the very existence of many industries depends solely upon the transportation rates which their "captains" are able to secure; it is also evident that any advance in transportation rates to and from certain points might very speedily throw a great business concern into bankruptcy.

What is the basis actually used in making and fixing rates? What basis ought to be so used? These are questions which the reader may reasonably be supposed to ask himself at this juncture.

In answer to the first question, before considering it at greater length, it must be said that there has never been any unified movement on the part of shippers, carriers, consumers and boards of rate control to adjust transportation rates on a really scientific basis; the tariff books are somewhat like Topsy—they “just grewed” to be what they are. Where not purely arbitrary, they are the result of experience correcting guesswork of an earlier day—however, only glaring injustices to certain groups of shippers, carriers, consumers, and communities have been remedied, now by the carriers themselves, now by courts, redressing the grievances of plaintiffs, and again by statutes regulating the rates directly, and yet again by legislatures, State and national, creating boards and commissions with wide discretionary powers.

Prior to the age of railways, transportation by land was carried on mostly by carts and wagons drawn by horses and mules—a slow, laborious and expensive process, precluding utterly the transfer of any considerable quantity of stuff for any considerable distance, since the cost of transportation soon became prohibitive in the case of all commodities except those whose value was very high in proportion to weight. Silks and spices are notable examples of such goods, which were transported long distances by land from the Far East to the Mediterranean and thence by boat to the Italian cities for distribution over Europe.

But, except in the case of luxuries, transportation revenues were a small item in the business of the world—goods did not move far. Life was simple, wants few; the necessities were produced in, or near, each com-

munity. None but the rich could expect luxuries, and they not many.

We must regard the invention of the steam engine as marking the beginning of the greatest revolution in human life, employment and habits that our planet has ever known. It ushered in the industrial age, and within less than a hundred years after the construction of the first locomotive changed the face of society more than all the forces of the past had been able to change it in three thousand years.

No application of the steam engine's energy has had an influence more powerful than that comprehended in the expression, "railway systems;" with the construction of railroads came a breaking down and disintegration of the old economic order. People found it economical to produce more goods of a certain kind than they themselves, and later, more than their communities, could use—and to give up making other goods, such as the railroad could deliver to them from other places at a lower cost than that at which they could produce them themselves. This represents the first step in the evolution of specialized industries, which has now reached the stage where certain products in universal use are almost exclusively supplied to a whole nation by a single corporation. The business of many of these corporations amounts annually to hundreds of millions of dollars each, and they furnish employment to hundreds of thousands of workers.

From this point onward, till the subject of express companies is reached, the traffic question is discussed with special reference to railroads as common carriers. The

economic aspect is, in general, the same for all classes of transportation agencies.

What is the economic relation, on the one hand, between the railroads and the producers, and on the other hand, between the railroads and the consumers, both of whom the carrier may serve at one and the same time? But more specifically, this question is a repetition of the rate question.

Perhaps we shall better understand the situation, if we try to discover what the different parties would wish to have were the decision left for them to make. We may be reasonably sure that in the conflict of interests between the carriers and the rest of the public each side endeavors, so far as it can, to approximate that ideal.

Given a free hand, the carriers will naturally fix or shift the rate to the exact level that will yield them the maximum of profit on their investment. Their endeavor will be to make the rate just low enough not to force them to add to their physical equipment and man-power before they believe such additions will assure them proportionately higher net earnings, and just high enough not to throw into disuse money-making equipment already available. "What the traffic will bear" is the term applied to this system of rate-making, which represents the ideal of the carrier. It is the system that railways actually have adopted, in so far as they can apply it in estimating the results of their charges.

The business ideals of the rest of the economic world—shippers, producers, manufacturers, or consumers—tend toward the opposite extreme. They—most of them, at least—would, if it were in their power, beat down the

rates on all commodities to the "uttermost farthing," thereby reducing the net earnings of the transportation companies to the very lowest level that would not mean poor service to themselves or absolute bankruptcy to the companies. They would then, as they have done in the past, enter a class, commodity, and territory war with one another for the points of vantage, battling to secure—each for himself, his business, or his city—every possible and impossible concession, even to the point of shifting a burden unfairly upon some other part of the public. "Every man for himself, and the devil take the hindmost" not unfairly characterizes their attitude.

Justice lies somewhere in the neutral zone between these two poles—just where, nobody has yet been able to determine. Quite evidently the solution lies hidden in the answer to the question, How can rates be adjusted so that compensation may be made equal in value to the value of service rendered? This is the desideratum.

But the term service looks in two directions—has a double significance. Is the service to be weighed on the seller's or the buyer's scales? Quite aside from the well-known proverb that sellers' weights are heavy and buyers' light, it may actually cost the seller a great sum to render a service which may be of trifling value to the buyers, and vice-versa. The service thus changes its value in passing from one to the other.

Consider this extreme case: An American fleeing from Mexico during the disturbances there willingly and eagerly paid an old boatman three hundred dollars to row him across the Rio Grande—a stream not three hundred yards wide; the refugee was in no particular

danger at the time—but he thought he was, and the Mexican boatman showed no disposition to calm his alarm. Now, in this case, the service rendered *to the American*, in relief from mental anguish, was worth—according to his own statement—three hundred dollars, but the service rendered *by the Mexican* was not worth even three dollars.

This may appear to be a piece of juggling; it will serve, however, to help us in our search for a firm foundation to build upon. In the incident just recited no one in his senses—the hero alone excepted—can doubt that the boatman was guilty of cheating.

In making rates, carriers have not neglected to take into consideration both sides of this two-headed question of service, being prone to charge for *service received*, when such service is very valuable to the recipient, but for *service rendered* when it is expensive for them to render. This is but another application of the what-the-traffic-will-bear system, sugar-coated in each instance to make it palatable. There are two partially restraining influences acting to prevent the realization of this aim—competition and legislation, the latter affecting more especially the railroads and express companies.

We shall now enumerate and discuss the different factors that enter into the fixing of railway rates. In doing so we shall present only generally the way in which our system has grown up. It must be remembered that the matter is wholly within the hands of the Interstate Commerce Commission and that the elements that enter into the fixing of a specific rate on a specific commodity for a specific distance, that is, from one place to another

definite place, are not simple. The interests of the public must be considered, those of the shipper cannot be neglected, and the railroad must be permitted to earn such a return on its investment as will attract new capital to satisfy the ever expanding needs of a growing institution.

It might seem that the charge, in each and every transaction, should be based upon the cost of performing the service contracted for: this, in the first place, is impossible to determine; all the rate experts in the country could not figure, jointly or severally, the cost to the railroad companies of carrying a ton of potatoes from Aroostook, Maine, to New York City. In fact, the cost would necessarily vary on different days, even if it could be ascertained. Even the average cost of hauling ten thousand tons of potatoes in single-ton lots, which would be a fairer basis to employ in levying the charge, does not admit of determination. The outlay and income resulting from railway business are both distributed among so many forces, all interrelated with one another, that no one can say just what effect here will follow a certain change there. Only general principles can be applied. One authority has well said that rate-making is a matter, not of mathematical formulæ, but of sound judgment.

The bases of the two fundamental principles of rate-making are, accordingly:

1. What the traffic will bear.
2. Cost of service.

In the United States elements of both systems are discoverable in the tariff rates and classification sheets.

We see an exemplification of the former when cotton

from the South comes to the North at a low rate, and later in the form of cloth goes back, it may be to the same county, at a very much higher rate. The justification is that the ratio of value to weight has changed—that is to say, value of the commodity enters into the question. Except for a slightly increased expense in loading at terminals and the added insurance risk due to increase in commodity value, it costs the railroads no less to haul a car of raw cotton from Atlanta to New York than to haul a car of manufactured cotton goods from New York to Atlanta. It is expedient to make this apparent discrimination (and thousands of others of a similar nature)—expedient alike for the carriers and the public, in much the same way that a graduated income tax may be expedient.

Rates based on “what the traffic will bear.”—The principal influences affecting transportation charges, as we have seen, are (1) what the traffic will bear, and (2) cost of service. We consider first the factors included under “what the traffic will bear.”

1. *Value of the commodity.*—The principle under which rates are based partly upon the value of the commodity transported is an important one, and in its workings is not unlike that of taxation. While it may not cost the railroads more to handle a carload of manufactured cotton goods (beyond a slight allowance for extra insurance-risk) than to handle a carload of raw cotton, they have found by experience that the traffic will bear a considerable increase in rates. The ratio of increase in such rates is so small in proportion to the value of the goods that it appears quite negligible to

wholesale dealers and jobbers, who find no trouble in passing it on down the line to the consumers.

(2) *Competition*.—Competition, especially between water-way and railroad carriers, which railroads must meet, is the chief factor in determining the rates between points accessible by both boats and railways. Transportation by water is naturally less expensive than transportation by land, a condition due mainly to the fact that nature has provided the water-way, whereas the artificial roadbeds which man has constructed represent an outlay of hundreds of millions of dollars. Grading, tunnelling, bridging, steel trackage, upkeep—all these demand vast expenditures of wealth with which river, coastwise, and ocean traffic does not concern itself.

If the Boston-San Francisco rates were, car for car and mile for mile, proportioned to the Boston-Indianapolis rates, the railroads would get practically none of the business—nearly all the freight would move by water via the Panama Canal. In this case the roads are permitted to meet the water rates, are even allowed in doing so to make a lower rate to San Francisco than that in effect from Boston to California points through which the freight must pass to its destination.

California and Nevada towns have not unnaturally complained that they are the victims of discrimination—that, if the railroad companies are making money out of the haul from Boston or New York to San Francisco, it proves that their tariffs for intermediate points are exorbitant. The answer to this has been that, as a result of this apparent favoritism to San Francisco, the railroads are able to make a small profit per car (amount-

ing in the aggregate to a considerable sum) on San Francisco traffic—a sort of by-product, so to speak,—which adds to their net earnings; that, deprived of this additional business, they would be compelled to raise the rates to intermediate points far above what they are now.

In general, the same arguments will justify apparent discrimination against intermediate points by round-about railways, competing with direct routes for a share of through traffic. Prior to the passage of the Interstate Commerce Act, one paragraph of which is quoted below, railroads not infrequently discriminated against their own intermediate points in non-competitive hauls.

“ . . . It shall be unlawful for any common carrier subject to the conditions of this Act to charge or receive any greater compensation in the aggregate for the transportation of passengers, or of like kind of property, for a shorter than for a longer distance over the same line or route in the same direction, the shorter being included within the longer distance, or to charge any greater compensation as a through rate than the aggregate of the intermediate rates subject to the provisions of this Act; but this shall not be construed as authorizing any common carrier within the terms of this Act to charge or receive as great compensation for a shorter as for a longer distance.”

Rates based on cost of service.—Various costs of service and other similar factors which influence the rates are the following:

1. *Capitalization, operating and overhead expenses.*—Among the costs of service which must be taken into

consideration are comprehended, such items as interest on the capital investment, maintenance of way and equipment, as well as operating expenses and other variable or fixed charges. These expenditures do not vary directly as the volume of business; it has been estimated that not more than a third of the outlay of a railroad bears a fixed ratio to the amount of business. Or, put in other words, two-thirds of the expenditures must be made quite independently of whether the road is hauling much or little.

2. *Weight and density of commodities.*—The relation of the weight and density of the commodities to the cost of service is so evident as to demand no further comment.

3. *Distance.*—The length of the haul is also a self-evident factor.

4. *Speed of transit.*—The time element is frequently a very important matter, as when the commodity is perishable, or when there is competition between shippers of the same commodity to reach a market early in the season while prices are high. Early in June, for example, there is a contest between the cantaloupe shippers of southern Texas and those of California to be first in the northern markets.

5. *Amount.*—Railroads, as sellers of transportation service, in common with other sellers, can do a wholesale business more cheaply per unit than they can retail. Accordingly, a commodity shipped in carload quantities properly takes a lower rate, ton for ton, and a still lower rate in train-load lots.

6. *Direction.*—When the grain shipping season is at

hand, thousands of loaded cars begin moving from the Mississippi Valley country to the East, and, after discharging their cargoes, must return with all possible speed to be reloaded. These westward bound trains will at such a time necessarily consist of "empties," and rather than dispatch a great percentage of them in that condition, the companies are willing to make some special rates to secure westbound freight—especially such as requires stimulation to move in normal times.

Classification.—Classification is a concrete application of the matter of value, perishability, risk and other elements affecting the commodity, such as its condition, form, packing, and the like. Some ten or twelve thousand articles appear in the classification books, grouped into from six to fourteen classes. In the beginning of railroad transportation in this country each road was privileged to make its own freight classifications, article by article, doing as might seem proper and expedient. With the expansion of the transportation system and the continued linking of line with line came a hopeless confusion: one road classified a commodity one way and another another, until neither shippers nor carriers were sure of their ground in interline traffic.

Gradually the roads in certain sections adopted the same classification, and finally the whole United States was divided into three classification territories, viz., the Official, including territory north of the Ohio and Potomac rivers and east of the line separating Illinois from Indiana; the Southern, including the territory south of the Ohio and Potomac rivers and east of the Mississippi; and the Western, including the territory west of the

Mississippi, and most of the State of Illinois. Each of these territories has a classification committee composed of appointees of the various roads; their classification, like their rates, are subject to approval, for interstate business, by the Interstate Commerce Commission. Most of the States also have State railroad commissions possessed of powers over interstate traffic analogous to those of the national commission.

If you should wish to find the rate applying to a given commodity, you would first have recourse to an alphabetically arranged classification book containing a list of some ten or twelve thousand articles, to discover whether that particular thing, in that particular form, packed or crated in that particular way, was classified as first, second—or fourteenth class freight. Then, if successful, you would refer to the tariff book giving the local or the interline (joint) rate on freight of that classification, weight, and quantity destined from your station to the consignee's station.

Freight classifications, however, are so complicated because of overlappings and various other factors entering into the problem, that the assistance of an expert is often needed to disentangle the knots; even with such aid you cannot be sure you have the most advantageous classification. Certain commodities under slightly different names, perhaps, according as they are intended for different uses, may take entirely different classifications, with a corresponding difference in the rate which applies.

Commodity rates.—A very important exception to the classification book and tariff book system of rating—

comprehending, indeed, two-thirds or three-fourths of all railroad traffic (when measured by tonnage)—is to be found in the commodity rate, which embraces the classification, the distance, and the charge, all in one. Historically it represents a special concession made by the railroads to a certain city or section of the country in favor of some one commodity destined to some particular point. A commodity rate, therefore, specifies one commodity, from a given station, to a given station, at a given tariff, per hundredweight or per minimum carload. It serves to create business for both producers and carriers, since, without a concession, the commodity would not move at all. Justification for its existence rests upon the same grounds as that for competitive rates; namely, that the earnings of the roads are thereby augmented, thus permitting them to keep the rates on classified freight lower than would otherwise be possible. Coal, grain, forest products, ore, gravel, cement, and cotton are examples of commodities taking this rate.

Shipping papers.—Accompanying or connected with each shipment are certain documents, the most important of them being the bill of lading and the way bill.

Bill of lading.—When freight is delivered at a railway terminal or freight station for shipment it is usual for the agent to give the shipper a receipt therefor, although it is not really necessary. In any case the agent will make out in triplicate a *bill of lading*, which is the contract between the two parties to the transaction, and, as such, requires the signature of an agent of the carrier and of the shipper or an agent acting for him. Two copies (the original and one other) are given to the

shipper, the other being retained by the agent. It is customary for the shipper to transmit the original to the consignee, who presents it to the agent at his station when he claims the freight. Besides the signatures and several hundred words of fine print reciting the terms of the contract the bill of lading enumerates: name of shipper; name of railway company accepting the freight; number and weight of pieces in the shipment; value, together with a statement of class and rate; route; destination; name of consignee.

Bills of lading may be of two kinds—straight or order. The essential differences are these: 1. The straight bill of lading permits the consignee to receive the freight by merely paying the charges and signing for it, whereas the order bill of lading holds the freight subject to the shipper's order, which usually means that he is withholding the endorsed original bill of lading until he receives payment for the goods. 2. The straight bill of lading is a non-negotiable piece of paper; the original of the order bill of lading is negotiable, and, when endorsed by the shipper with draft on consignee attached may be discounted by the shipper at his bank.

Way bill or way card.—The way bill, or way card, so important for the railroads, contains much the same information as the bill of lading, and serves as a sort of routing card to accompany the shipment; it is, in this respect, not dissimilar to the coupons of a passenger's ticket.

Notice of arrival.—When a shipment reaches its destination, it is customary for the agent to give notice to the consignee, who may receive the goods by surrendering

the bill of lading and paying the freight charges, itemized on the *freight bill*, which the agent receipts.

Demurrage.—Transportation efficiency cannot be maintained when there is a great disparity between the volume of traffic and the supply of cars to handle the traffic. From the standpoint of railroad operation, car shortage and car surplusage are alike indications of waste; shortage, usually seasonal, means that the roads, as sellers, are out of goods and consequently must miss some sales; surplusage, usually seasonal also, means that the roads, as sellers, have too much goods on hand and consequently must lose money on idle investments. From the standpoint of shippers, surplusage is a matter of small concern, directly, at least; but shortage may result in disaster to the shipper as well as in loss to the carrier. A charge, known as "demurrage," therefore is assessed against the consignee who fails to unload his car of goods within a given time. The tendency is toward increasing the demurrage charges, as well as to make the charge progressive day by day while the car is held by the consignee.

Express traffic.—The general principles of traffic are the same for the express system as for the freight system discussed in the preceding pages. The essential difference lies in the increased efficiency of the express companies in forwarding commodities at a high rate of speed. The present condition of express transportation, under which there is frequently a great amount of delay in transporting and delivering express shipments, is due, of course, not to the speed at which the shipment is carried while actually in movement but to the insufficiency of

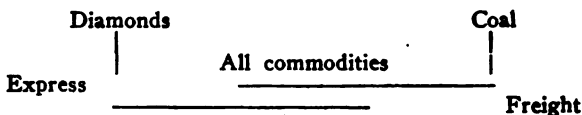
facilities for moving the shipment at all. Freight trains average about twelve miles per hour, whereas express packages, which are forwarded on passenger trains, may average thirty miles an hour. There is, besides, an added convenience in shipping by express: the companies, except in very small towns, deliver the packages to and from the house making or receiving the shipment. These advantages—particularly speed of transit—necessarily result in making express rates much higher than freight rates for corresponding commodities and distances.

Eight express companies (now operated by the Government), each contracting with a railroad system for the exclusive right of forwarding express matter on the trains of that company, operate more than three hundred thousand miles of road. The major part of this mileage is covered by two of these companies—the Wells-Fargo and the American. The compensation to railroad companies for their services is a percentage, specified in the contract, of the gross receipts of the express companies; this percentage varies, of course, under different conditions, density of population in the section served being the most important factor in fixing it.

In 1906 the Hepburn Act and in 1910 the Mann-Elkins Act declared, in effect, that the express companies were common carriers, thus bringing them under control of the Interstate Commerce Commission. The commission in 1912 established a block and zone system dividing the whole country into districts and established a system of rates for express charges, much lower than those in effect prior to that date.

Most commodities shipped by freight would in no case

move by express; most commodities shipped by express would not move by freight. Coal and diamonds may be taken as two extremes of this statement, with all other commodities occupying points in the line between the two limits. The overlapping is less than we should be likely to imagine. In other words, in most instances whether shipment should be made by express or freight is not a difficult task to determine.



Parcel post.—On January 1, 1913, the Federal Government definitely entered the field as a competitor of the express companies by establishing a parcel post system, which amounted to increasing tremendously the weight of fourth class packages that could be forwarded at a given rate. In the first zone (50 miles) and the second (150 miles) the maximum weight has been made fifty pounds; in the other zones the maximum is now twenty pounds. The rates are fixed by a graduated double scale—one scale for weight, the other for zone-distance. A pair of scales, a parcel post map, which shows the particular numbered unit of every post-office in the United States, and a zone, weight, and rate table are all the equipment a shipper needs to figure the cost of shipment.

As compared with express shipments it may be observed that the latter are usually lower for short distances and packages weighing only a few pounds. Express insurance may be made to cover loss over fifty dollars (the parcel post maximum) and includes protection

against partial loss as well, a contingency not provided for in the parcel post system.

Careful comparison of service rendered as against rates charged is necessary to determine in many instances which is the more advantageous method. The choice for some commodities will be in favor of one, for others with the other; whereas the difference in rates for the same commodity and practically the same service will tip the scale now in favor of one, now of the other.

Correlation of transportation systems.—It is probable that in the readjustment of transportation systems after the war we shall see an intelligent attempt, perhaps fostered by the Government, at correlation or co-ordination of the various transportation systems of the country. The scheme of unification should include not only railways, electric lines and waterways, but also the highways, each system of transportation not competing with but supplementing the service of the other. The scheme should and undoubtedly will include not only the transportation of goods from place to place, but also what is called "door delivery." By this means each part of the general service of transportation will be carried on by the system best equipped to perform it.

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CHAPTER XXIII

FOREIGN TRADE AND OCEAN TRAFFIC

Balance of trade.—Before the European War the United States had an apparent favorable balance of trade. It exported merchandise worth \$500,000,000 in excess of the value of its imports. This term "favorable balance of trade" dates back several hundred years to the teachings of the *Mercantilists*, a school of economists whose real purpose was to enrich the native country with gold. If exports exceeded imports, the balance had to be paid in gold.

We now realize that there cannot in normal times be a balance of trade, for trade must include not only merchandise, but services and even credits. If a country buys more abroad than it sells abroad, the excess will have to be settled in one way or another. For example, our American pre-war "favorable balance" of \$500,000,000 was paid for as follows:

| | |
|--|---------------------|
| Interest paid on American securities and property rights owned abroad..... | \$175,000,000 |
| Freight charges paid for foreign bottoms.. | 25,000,000 |
| Remittances to the "old country" by immigrants | 125,000,000 |
| Expenditures of American tourists abroad. | 150,000,000 |
| Insurance premiums paid to foreign companies | 25,000,000 |
| Total | <hr/> \$500,000,000 |

These items include what are called the invisible items. They are none the less real when it comes to using them for offsetting credit balances.

Present trend in our foreign trade.—During the European War the demand for our goods raised exports, while imports remained fairly stationary, and the result was an increased favorable balance of trade, paid for largely by the credit of foreign nations and foreign business men. During 1919 and the early part of 1920, imports began to rise and the balance diminished somewhat. In 1920 and 1921 both imports and exports dropped and toward the end of 1921 exports continued to drop while imports increased slightly.

Future trend of foreign trade.—There is due the United States and its nationals from foreign countries and from foreign individuals, annual interest payments of somewhat over \$600,000,000. The European nations would pay this partly by entertaining the American tourists, by insuring our cargoes and carrying our cargoes, but the balance probably will not be struck by these items and we shall therefore have to do one of two things, either import an excess of commodities or invest the balance due us in foreign securities. Unfortunately, Americans are provincial in matters relating to trade, language and laws, and we shall therefore have to be educated in these matters before American capital will seek foreign investments. However, it will be to our advantage to make these foreign investments rather than to import merchandise. The problem, then, is one for our colleges and universities. They must train men not only to have a smattering knowledge of the literature of foreign nations, but to be able to use

foreign languages as tools of business. We must get over racial prejudices and must understand, not in an academic but in a very practical way, the histories of foreign nations. We must study their forms of government and know something about their laws. We shall then be ready to make investments in foreign enterprises and in that way help to keep domestic business active by providing the means in foreign countries for paying for the export of our goods.

Nature of exports.—During the nineteenth century the United States yielded to the world part of its natural resources. Its own manufactures were not largely developed and it is not surprising, therefore, to find that during these early years most of our exports consisted of crude materials and foodstuffs.

The growth of population in this country and the development of our resources have changed the situation. We have more need for our own raw materials and foodstuffs and we are producing an exportable surplus of manufactured goods. The story is told in the following table:¹

| <i>Year *</i> | <i>Crude Materials</i> | <i>Foodstuffs</i> | <i>Manufactures</i> (per cent) | <i>Miscel- laneous</i> |
|----------------|----------------------------|-------------------|-----------------------------------|----------------------------|
| 1885-1894..... | 36 | 43 | 21 | † |
| 1895-1904..... | 28 | 40 | 32 | † |
| 1905-1914..... | 32 | 24 | 44 | † |
| 1915-1919..... | 15 | 28 | 55 | 2 |
| 1920..... | 25 | 27 | 48 | † |
| 1921..... | 20 | 28 | 52 | † |
| 1922 ‡..... | 26 | 31 | 43 | † |

* Fiscal years ending June.

† Less than 1 per cent.

‡ 11 months ending May.

¹ *Commerce Monthly*, August, 1922.

During the early years our trade was chiefly with Europe, and even to-day more than 50% of our exports go to that continent. However, the development of the North American continent outside of the United States has opened up larger markets for us on this side of the Atlantic, and our increasing interest in the Far East has resulted in an ever increasing trade with Asia and Oceania. In spite of the large interest that has been taken from time to time in the development of South American trade, we have not been very successful there. Since 1885, as is shown in the annexed table, South America has taken only about 5% of our exports.¹

| <i>Year *</i> | <i>Europe</i> | <i>North America</i> | <i>South America</i> | <i>Asia and Oceania</i> | <i>Africa</i> |
|---------------|---------------|--------------------------|--------------------------|-----------------------------|---------------|
| 1885-1894.... | 80 | 11 | 4 | 4 | 1 |
| 1895-1904.... | 76 | 14 | 3 | 5 | 2 |
| 1905-1914.... | 66 | 20 | 5 | 8 | 1 |
| 1915-1919.... | 67 | 18 | 5 | 9 | 1 |
| 1920..... | 60 | 20 | 6 | 12 | 2 |
| 1921..... | 53 | 25 | 8 | 12 | 2 |
| 1922 † | 55 | 24 | 5 | 15 | 1 |

* Fiscal years ending June.

† 11 months ending May.

Nature of imports.—Before the European War our imports were chiefly of manufactures, though an increasing percentage was made up of crude material, while a decreasing percentage was made up of foodstuffs. The shutting down of European factories during the European War decreased our imports of manufactures and increased perceptibly the percentage of crude materials brought in. Since the war, however, we are getting back

¹ *Commerce Monthly*, August, 1922.

to the pre-war position, as is shown in the following table: ¹

| <i>Year *</i> | <i>Crude Materials</i> | <i>Foodstuffs</i> | <i>Manufactures</i> | <i>Miscel- laneous</i> |
|----------------|----------------------------|-------------------|---------------------|----------------------------|
| 1885-1894..... | 21 | 35 | 43 | 1 |
| 1895-1904..... | 30 | 29 | 41 | † |
| 1905-1914..... | 34 | 24 | 41 | 1 |
| 1915-1919..... | 40 | 27 | 32 | 1 |
| 1920..... | 41 | 29 | 29 | 1 |
| 1921..... | 29 | 35 | 35 | 1 |
| 1922 ‡..... | 35 | 24 | 40 | 1 |

* Fiscal years ending June.

† Less than 1 per cent.

‡ 11 months ending May.

The European War had a greater effect upon the direction from which our imports came, and while the tendency is to get back to the relative positions occupied before the war, the continued upheavals in Europe have prevented us from getting out of that continent the proportion of imports that we used to get prior to 1914. A number of commodities come directly from their point of origin, and therefore we find a large percentage of our goods comes straight from Asia and Oceania. For example, while 45% of our rubber and 61% of our tin came through Europe in the period before the war, now only 16% of rubber and 26% of tin imports enter from Europe. ²

Economic justification of foreign trade.—There are a number of theories concerning foreign trade which it is not necessary for us to introduce here. Most of them have some element of truth in them. Some people, for example, feel that foreign trade is a logical development of

¹ *Commerce Monthly*, August, 1922.

² *Ibid.*

the principle of the division of labor. Nations produce what they are best qualified to produce and therefore must rely upon outside nations for other commodities. Peace is promoted in this way for the economic organization that is built up is very delicate.

Foreign trade acts as a sort of governor and enables domestic producers to extend their markets and be free from local disturbances. The importance of a stable amount of business is sometimes not appreciated by business men. It rests upon the theory of fixed and variable costs. If, for example, a business produces \$1,000,000, with operating expenses of \$600,000, of which 40% are fixed and 60% variable, a drop of 10% in gross business will amount to a drop of 16% in profits as follows:

| | <i>Normal Year</i> | <i>Decrease of 10% in Gross</i> | <i>Decrease of 20% in Gross</i> |
|----------------------|--------------------|-------------------------------------|-------------------------------------|
| Gross Revenue | \$1,000,000 | \$900,000 | \$800,000 |
| Operating Expenses.. | 600,000 | 564,000 * | 528,000 |
| Profits | \$ 400,000 | \$336,000 | \$272,000 |

* 60% of the \$600,000 will drop 10%, i. e., 10% of \$360,000, or \$36,000.

The decrease of \$64,000 in profits is a decrease of 16% and the decrease of \$128,000 is a decrease of 32%. It appears therefore that a decrease in gross revenues is reflected by a decrease in profits twice as great. Under these circumstances it will pay a manufacturer to find an outlet for his maximum production even if the last products are sent to foreign countries at prices considerably reduced. It affects adversely the business of the country where the dumping takes place, and some countries therefore have passed laws forbidding the practice.¹

¹ See Kidd's *Foreign Trade*, p. 24 et seq.

Developing foreign markets.—A business that wishes to enter foreign trade must first find out where a possible demand for its product exists, the extent of the demand, peculiar qualities of the demand depending, for example, on racial prejudices or local custom, the best methods of reaching the market, whether, for example, through branch houses, local agents or the like, and the problems involved in shipping and financing.

A market analysis therefore of a foreign country would include a study of purchasing power and prices, special conditions of demand peculiar to the market, buying seasons, location of lists of possible buyers, influence of other nations in controlling the market, and national or racial prejudice.

Purchasing power.—A fair example of what is meant by understanding the purchasing power is supplied by these figures concerning Algeria. The statement that Algeria contains 5,802,464 people is altogether misleading, since an analysis of the population shows that 4,971,424 are natives.

Special marketing conditions.—The likes and dislikes of people frequently are more important than the intrinsic quality of the product. Habit is a powerful force which is usually easier to enlist as an ally than to overcome as an obstacle. The International Harvester Co., for example, in building machines for Great Britain, discovered that gates in the stone walls were built of a standard width, too narrow to accommodate their machines. To change the gates would have been sacrilege, and therefore the machines had to be constructed to run sideways for the purpose of getting them into the fields.

Buyers.—The same waste of misdirected advertising will be experienced in foreign countries as is experienced at home unless some effort is made to get directly to potential buyers. Various agencies exist in this country for securing names of wholesalers and retailers in various lines. The Department of Commerce can assist in making this part of the investigation.

Sources of information.—The chief problem in market analysis is to discover sources of information. The rest is a matter of diligence and carefulness. Various agencies in the United States such as the large banks, the Foreign Trade Council, the Philadelphia Museum, foreign American chambers of commerce, the National Association of Manufacturers, and especially the Bureau of Foreign and Domestic Commerce of the Department of Commerce, will generally yield all the material necessary to supply the needed information.¹ The number of trade lists of for-

¹ The following is a list of the foreign Chambers of Commerce in America:

American-Russian Chamber of Commerce, 233 Broadway, New York City.

American-Roumanian Chamber of Commerce, Room 872, Woolworth Building, New York City.

American-Polish Chamber of Commerce and Industry of the U. S., 40 W. 40th St., New York City.

Argentine-American Chamber of Commerce, 64 Broad St., New York City.

Belgian Chamber of Commerce, 59 Pearl St., New York City.

British Chamber of Commerce, 295 Broadway, New York City.

Chinese Chamber of Commerce, 701 Grant Ave., San Francisco, Cal.

Czechoslovak Chamber of Commerce in America, 60 South Water St., Chicago, Ill.

Czechoslovak Chamber of Commerce, 106 E. 19th St., New York City.

Franco-American Board of Commerce and Industry, Room 1719, Flatiron Building, New York City.

French Chamber of Commerce of New York, 456 Fourth Ave., New York City.

oreign merchants furnished by the Department of Foreign Commerce for a period of four weeks shows the following totals: ¹

| | |
|-------------------------|------|
| February 11, 1922 | 768 |
| February 18, 1922 | 1351 |
| February 25, 1922 | 1158 |
| March 4, 1922 | 1115 |

Mediums for reaching foreign markets.—While the same paraphernalia in general may be used in foreign countries as is used in this country, attention must of course be given to local custom. The aim generally should be to give a local flavor to whatever medium is used. For example, it is doubtful if any kind of a circular could be printed in Germany with the presses and type they use there that would not be detected as a German product immediately by the average, intelligent business man. If

Holland-American Chamber of Commerce for the Pacific Coast States, Inc., 235 Montgomery St., San Francisco, Cal.

Italian Chamber of Commerce, 604 Montgomery St., San Francisco, Cal.

Italian Chamber of Commerce, 1613 Masonic Temple, Chicago, Ill.

Italian Chamber of Commerce in New York, 99 Hudson St., New York City.

Japanese Chamber of Commerce, 444 Rush St., San Francisco, Cal.

Norwegian-American Chamber of Commerce, 17 State St., New York City.

New York Chamber of Commerce for the Netherlands and the Netherlands East and West Indies, Inc., Room 956, 11 Broadway, New York City.

Pan-American Chamber of Commerce, 42 Broadway, New York City.

Philippine-American Chamber of Commerce, 37 Broadway, New York City.

Portuguese Chamber of Commerce and Industry in New York, 29 Broadway, New York City.

Spanish Chamber of Commerce in New York, 129 Water St., New York City.

Swedish Chamber of Commerce, Produce Exchange Annex, New York City.

¹ Ninth National Foreign Trade Convention, p. 294.

that holds true of German literature in America, the same probably holds true of American-produced literature used in other countries. Translations should be made by natives who understand the idioms. The best-educated college professor would probably turn out a ridiculous circular or catalogue. Export catalogues, house organs, foreign newspapers, display rooms and moving pictures have all been used with good results by leading American exporting houses, and many have found that participation in foreign affairs is a helpful form of publicity. It may be noted in passing that the trade-mark generally plays a more important part in foreign commerce than it does in American commerce. For example, the foreign company desiring to register a local brand in China is required by law to give not only its name but its trade-mark. The problem of protecting established trade-marks from piracy by native merchants in some countries becomes a very serious one.

The packing problem.—When American exporters were beginning to enter foreign fields, they made the mistake of paying little attention to the problem of properly packing their goods. The result was that goods were damaged, lost, or stolen, so that the consignee—and sometimes the consignor, where he was to pay freight and tariff—lost all possible profits through neglect to pack economically. For example, where the tariff is laid by weight on the gross burden of container and goods, it would be the height of folly to ship in heavy metal cases if the goods could be packed in boxes or bales. Where goods are to be transshipped, they must necessarily receive extra care, and some thought must be given to the

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mechanical means used in handling the packages; otherwise goods will be destroyed by hooks or smashed in chutes. If the country to which goods are consigned is noted for excessive heat or dampness, some measures should be provided for these exigencies. Moreover, the legal rules for marking packages to meet tariff regulations should be observed. These usually require a statement of gross weight and net weight, that is, a statement of the weight of the entire package and a statement of the package less the tare.

On the subject of "Lessons of the Past Year," Sir Stanley G. Flagg, Jr., of Stanley G. Flagg & Co., Philadelphia, made these remarks concerning the special topic of "packing" at the Ninth National Foreign Trade Convention. "We know that goods carriages abroad are usually shorter than our own, that tonnage capacities are usually much less, that with them a carload may mean 8 tons, and with us from 35 to 50 tons. We have learned that facilities for loading and unloading, with or without tackle, are limited as to capacity, and that land transportation has many and frequent restrictions. Perhaps we overlook special packing construction as affecting customers' needs, which, in many cases, if not adhered to, will cause costly outlays, for which we may be held responsible if we failed to be exact in carrying out these instructions by our customers. We have found that duties are assessed by weight and that these duties most frequently are assessed upon the weight of the container as well. The legend, 'handle with care,' means little where no English is spoken, and we know that 'fragile' is much better to use, inside or outside of English speaking countries. We have

also found that provisions for the proper use of hooks and lifting tackle are not without value."

In selling goods to foreign countries, an important item of cost is the transportation tariff. Losses, special fees and taxes, costs of handling, and other items, also add to the cost of laying down goods in a foreign country. It therefore becomes very necessary in making a contract to understand which of the parties is to bear these costs. The settlement of this question depends almost entirely upon the method of quotation. Nine quotations are in more or less common use, the meaning of which have been fairly well established. These quotations and their interpretations are as follows: ¹

1. F. O. B. (free on board) shipping point.
2. F. O. B. (named point) freight prepaid to seaport.
3. F. O. B. (named point) freight allowed to seaport.
4. F. O. B. cars (named port on seaboard).
5. F. O. B. cars (named port) lighterage free.
6. F. O. B. vessel (port named).
7. F. A. S. (free along side) (port named).
8. C. I. F. (cost, insurance, freight) foreign port named.
9. C. and F. (cost and freight) named foreign port.

Of all these quotations, the one most frequently used and the one that is generally regarded as the most efficient is the C. I. F. quotation.²

Documentation.—One who desires to understand the workings of foreign trade must very early in his studies take up the problem of the papers that are used in connection with the carriage, insurance, and financing of shipments. Besides the shipping permit which enables the

¹ For the exact meaning of these terms, see Kidd's *Foreign Trade*, Chapter VIII.

² For a very concrete discussion of the advantages of quoting on various bases, see *Official Proceedings, Ninth National Foreign Trade Convention*, pp. 168 et seq.

consignor to deliver the goods at the wharf, and which is obtained from either the railroad delivering to the shipping company or from the shipping company direct, there are the following documents to be considered: the bill of lading, the bill of exchange, the invoice, and the marine insurance certificate. All of these documents taken together constitute the "documentary bill."

The bill of lading may be a bill for the railroad, with another for the ship, or it may be a through bill carrying the goods from the point of shipment to the foreign country. Bills of lading must be carefully studied for if they throw any suspicion on the title to the goods, or on their condition, or leave room for dispute as to responsibility for damage, difficulty will be experienced in financing the shipment. The American law governing carriers' liability is the so-called Harter Act of 1893, which provides in part that a shipping company cannot insert a clause in its bill of lading absolving itself from liability for negligence. A movement is now on foot to have adopted in the important trade countries of the world, as a uniform law, certain rules drafted by the Maritime Law Committee of the International Law Association. These rules are known as the Hague Rules and are very similar to those laid down in our own Harter Act, with three important additions: they increase the carrier's liability from the now usual \$100 per package to £100; they allow twelve months in which the shipper may make claims for damage (the bills of lading now in general use provide that claims must be made before removal of the goods from the wharf); they shift the burden of proof in cases of loss from the shipper to the carrier. These rules are actually in use by ships

of the great Atlantic lines moving goods to Europe, but they have not yet been adopted in this country.

Kinds of bills of lading.—Bills of lading are issued in series, the number depending on the number of people concerned with the shipment. Non-negotiable copies are furnished for the files of the shipper, the shipping company, the consular's office and the bank, and negotiable copies are furnished for transferring ownership by endorsement.

"Clean bills" are those which indicate that the carrier has received the goods in sound condition. "Straight bills" are those which are used when the goods have been paid for or have been sold on open account, or when the law of the foreign country requires it. They will not be honored except when presented by the consignee or his agent. "Order bills" are most frequently used, and read, as far as right to receive the goods is concerned, "Received from exporter, to be delivered at port (of destination) unto order, or to his or their assigns."

Marine insurance.—With the exception of the provision contained in the Harter Act, which, as we have seen, does not permit a carrier to excuse its own negligence, the typical bill of lading is usually carefully drawn to avoid liabilities that might in the absence of such a contract be visited on the shipping company. The shipper, therefore, must protect himself by insurance. Thus, under the principle of "general average," if any goods are thrown overboard to save the ship and its cargo, the company and the cargo owners must contribute to save the owner of the jettisoned goods from total loss. Insurance policies, like the bills of lading, must be carefully

studied, for the insurance companies will issue policies that cover only the perils of the sea, containing, of course, clauses that protect against other perils such as fire, theft, leakage, breakage and the like.

The invoices.—The invoice in a foreign shipment is a much more important document than it is in domestic trade, for it describes exactly, or should describe exactly, the goods and their value for financing purposes and as a basis of customs assessment in foreign countries. Two copies are used, one called the commercial invoice, and the other the consular invoice in which the particulars are certified to by the consul of the foreign country to which the goods are directed.

Other papers.—Other papers are used in foreign trade work. Some countries require certificates of origin and non-dumping certificates. Dock receipts are instruments given for delivery of goods at the carrier's wharf, and are to be exchanged later for bills of lading. Under the dock receipt the carrier is a mere bailee and not a carrier. The drawback is a paper which entitles the shipper to 99 per cent of the tariff duty on certain materials used in the goods that are being exported. In effect, it provides that the materials used to make the exported goods were only temporarily held in the country and therefore should not have paid the customs duty in the first place.

Parcel receipts are used for small parcels such as samples that are carried separately and can be released promptly on the arrival of the ship.

A packing list is sometimes sent to show the foreign importer how the goods will arrive and how they must be

handled. This is sometimes supplemented by the statement of charges which shows, besides the value of the goods, the individual items of cost of shipping.

Ocean traffic.—One who wishes to understand the workings of foreign trade must have some appreciation of the problems of ocean traffic. While our discussion cannot be exhaustive, it will pay to consider briefly some of the more important factors, such as trade routes, types of vessels, ports, rates and practices.

Trade routes.—The principal trade routes of the world, as defined at greater length by Mr. B. Olney Hough, in his *Ocean Traffic and Trade*, are the following:

1. The North Atlantic Route—between North America and Northern Europe. Practically the same route is taken by vessels plying from North America and Europe to West Indian and Central American ports.

2. The Mediterranean and Oriental Route—between the United States or Northern Europe and the Mediterranean, Southern Europe, Northern Africa, India, the Straits Settlements, the Philippines, Japan and Australasia.

3. The South African Route—between American or European ports and Cape Town, Port Elizabeth, East London, Durban and Delagoa Bay.

4. The South American Route—between Europe or the United States and the east and west coasts of South America.

5. The Caribbean Route—between Europe or the United States and the ports of the Caribbean and the Gulf of Mexico, including American ports on the Gulf.

6. The East Asia-American Route—the Pacific Route between North America and Asia.

7. The North and South Pacific Route—between the North American Pacific Coast and Australasian Colonies.

The various trade routes, of course, are served by subsidiary routes or “feeders.” Not all vessels go and come over the same routes—in some cases a triangular course is necessary, as from the United States to Brazil, Brazil to England, and England to the United States.¹

Types of vessels.—Ocean carriers may be classified generally as being freighters, passenger vessels, and vessels which carry both freight and passengers. Freighters may be either “liners” or “tramps,” a liner being a vessel which has a regular route and a regular time of arrival and departure. The greater part of the world’s ocean freight is carried by “tramp steamers,” which may be chartered for voyages to any part of the world.

Ships may be steel; composite (steel frame and wood covering); wood; or concrete. The concrete ship is a late development, the outcome of which is still in doubt.

The relative importance of these types is shown in the following table, taken from Riegel’s *Merchant Vessels*.

CONSTRUCTION MATERIAL
WORLD’S MERCHANT MARINE²

| | Wood | Iron | Steel |
|------------|-----------|------------|------------|
| 1890 | 7,053,885 | 10,517,513 | 4,435,208 |
| 1895 | 5,534,677 | 9,211,561 | 10,223,101 |
| 1900 | 4,009,622 | 7,398,102 | 17,508,704 |
| 1905 | 3,394,850 | 6,044,824 | 26,445,998 |
| 1910 | 2,544,858 | 4,548,509 | 34,728,700 |
| 1911 | 2,409,331 | 4,233,858 | 36,116,427 |
| 1912 | 2,270,558 | 3,981,056 | 38,263,659 |
| 1913 | 2,113,276 | 3,721,285 | 41,005,887 |

¹ The Shipping Board has inaugurated many new routes, several leading directly to South America. See map in Zimmermann’s *Ocean Shipping*, p. 59.

² Comm. Nav. Report, 1917, p. 66.

| | <i>Wood</i> | <i>Iron</i> | <i>Steel</i> |
|------------|-------------|-------------|--------------|
| 1914 | 1,983,458 | 3,529,097 | 43,465,210 |
| 1915 | 1,920,264 | 3,353,146 | 43,112,311 |
| 1916 | 1,856,176 | 3,154,091 | 43,596,761 |
| 1919 | 3,513,579 | 2,294,410 | 45,111,284 |

Motive power.—The day of the sailing vessel is not yet gone. Internal combustion engines, such as are used in automobiles, but adapted, of course, to marine use, and Diesel engines, used as auxiliaries, will probably prolong the life of sailing vessels, for the winds furnish, under favorable conditions, a cheap and effective means of propulsion. Steam vessels are still largely in the majority, but a better understanding of the advantages of the Diesel engine will probably cause its substitution quite generally for the steam prime mover.¹ The use of oil under steam generating boilers, instead of coal, and its use in Diesel engines is causing a world-wide scramble for oil, that may for years precipitate international political jealousies.²

Computation of tonnage.—The term, tonnage, used with respect to ships, refers to their carrying capacity. Several "tons" are used as bases of computation. A "ton" in ocean transportation is usually a long ton (2,240 pounds), but in the coastwise traffic of the United States the short ton (2,000 pounds) is commonly employed. On the continent of Europe the metric ton (2,205 pounds) is often used.

Displacement tonnage. The displacement tonnage of a vessel is the weight of the vessel in long tons, when fully

¹ A Diesel engine is an engine that generates power by exploding a low-grade oil under great pressure—so great that the heat does the exploding, whereas in the gasoline engine an electric spark is usually relied upon to cause the explosion.

² See Zimmermann's *Ocean Shipping*, Chapter X.

loaded. This is equivalent to the weight of the water displaced by the vessel, a cubic foot of sea water being estimated to weigh 35 pounds. This term is used principally with respect to ships of war.

Dead-weight capacity. The dead-weight capacity of a vessel is the number of long tons it can carry when loaded to its maximum depth, this depth being indicated, on British vessels, by a line called the Plimsoll line.

Gross and net tonnage. The gross tonnage of a vessel is its total capacity in cubic feet divided by 100—so that a ship measures one gross ton for each 100 cubic feet of its total carrying space. Since much of this total space, being taken up by machinery and other fixtures, is unavailable for the reception of passengers or freight, the space which is available for this purpose must be measured separately, and is called the net tonnage, the basis being the same—100 cubic feet being estimated as a ton. The usual ratio of net tonnage to gross tonnage is about two to three; that is, two-thirds of the total carrying space in ton-units of 100 cubic feet is net tonnage.

Registered tonnage is the gross or net tonnage specified in the description of the ship when it is registered—registration being the submitting of a sworn statement of ownership, specifications, and other data to the proper authority, usually the collector of the port, whereupon, if all requirements have been complied with, a certificate of registration is issued, entitling the vessel to the privileges and protection of the government under which it is registered.

Cargo or measurement tonnage. The basis upon which a cargo is taken on is either the "measurement ton" of

40 cubic feet, or the weight ton, whichever will result in the largest profit to the owners of the vessel. Commodities vary in the relation of their weight to their bulk; the measurement ton of 40 cubic feet is designed as being representative of the space occupied by a weight ton of average commodities.

Ocean freight rates.—Ocean transportation is the cheapest form of transportation, on the basis of the cost of moving a certain quantity of goods a given distance. The reasons for the cheapness of ocean freight rates are that a great bulk of goods can be carried at once, and that there is no cost of construction or upkeep of road-bed as there is in the case of a railroad, the only costs attaching being those of the ships and of the terminal facilities, together with the operating expenses. Rates do not vary greatly with the distance, since the greatest cost is incurred at the terminals. While ocean rates have not been stabilized to the extent to which railroad rates have been, a fair degree of uniformity has been secured by means of agreements or "conferences" between the owners of "liners." The rates charged by liners in normal times are "what the traffic will bear," due consideration being given to the possibility of the competition of tramp steamers, whose charter rates are determined entirely by competition and are fixed on the shipping exchanges, where their services are sold by brokers. The brokers handling this class of business are in constant telegraphic and cable communication with shippers and owners of tramp vessels in all parts of the world.

The United States Shipping Act of September 7, 1916, while permitting conference agreements, provides that

such agreement must be submitted to the Shipping Board. The Act, however, forbids rebates, preferences and all other forms of discrimination between American shippers.

The Merchant Marine Act of 1920.—The Jones Act of 1920 has for its purpose the building up of an American merchant marine. During the Revolution our merchant marine fell away sadly, but just prior to the Civil War our "clippers" "dominated the commerce of the world."¹ By 1910 our shipping again was in a bad way; only 10 per cent of our imports and $7\frac{1}{2}$ per cent of our exports were carried under our own flag. The determination of the American Government to remedy this situation is voiced in the preamble to the Jones Act: "It is necessary for the national defense and for the proper growth of its foreign and domestic commerce that the United States shall have a merchant marine of the best equipped and most suitable types of vessels sufficient to carry the greater portion of its commerce and serve as a naval or military auxiliary in time of war or national emergency, ultimately to be owned and operated privately by citizens of the United States; and it is hereby declared to be the policy of the United States to do whatever may be necessary to develop and encourage the maintenance of such a merchant marine, and, in so far as may not be inconsistent with the express provisions of this Act, the United States Shipping Board shall, in the disposition of vessels and shipping property as hereinafter provided, in the making of rules and regulations, and in the administration of the shipping laws, keep always in view this purpose and object as the primary end to be attained."

¹ William Brown Meloney's *Heritage of Tyre*, p. 89.

The Act has been well summarized in a pamphlet issued by the Mechanics and Metals National Bank of New York, from which the liberty has been taken of making the following extracts: "The provisions of the Jones Bill may be divided, for purposes of a brief summary, into four classifications: (1) specific enactments governing the composition of the Board and assistance to shipping; (2) regulatory provisions; (3) instructions covering liquidation of government holdings; and (4) investigations directed to be made.

"(1) The Act repeals war emergency legislation and three sections of the 1916 Act, and amends other sections of it; it sets up a board of seven (instead of five) commissioners, territorially and politically representative, with salaries of \$12,000 (previously \$7,500), to direct and enforce its provisions and to exercise powers previously granted to, and delegated by, the President. It directs the President to terminate those provisions of treaties with other countries which restrict the right of the United States to impose discriminating customs duties favoring imports in United States vessels and discriminating tonnage dues. Profits of ship operation [are relieved from] Federal war and excess profits taxes if an amount equal to these taxes is invested in new ship construction in United States shipyards, up to one-third of the cost of the new construction; similarly, it [the Act] exempts from these taxes profits from ship sales if the entire profits are invested in new ship construction. These exemptions apply for a period of ten years beginning with 1921.

"The Board may create separate insurance funds to insure its own interests in vessels or plants; and a revolv-

ing construction loan fund out of revenues during five years not exceeding \$25,000,000 to aid in the construction of ship tonnage in private yards, up to two-thirds of the cost of each vessel.

"The Board is directed to take over, maintain, and develop dock and terminal properties acquired by the President, these not to be sold unless authorized by law.

"Considered of fundamental importance in its bearing on the whole shipping problem, inasmuch as the liquidation of government tonnage is dependent upon the investment of private funds, is Section 30 of the Merchant Marine Act, 1920, cited for separate reference as the Ship Mortgage Act, 1920. This section specifically and in great detail changes the existing law of ship mortgages to allow the granting of a preferred mortgage to take precedence over all maritime liens. By thus improving the security afforded for ship mortgages, it is expected that a greater amount of money will, other things being equal, be attracted to investment in American shipping.

"(2) Section 28 prohibits the application of lowered joint or proportional rates by carriers subject to the Interstate Commerce Act in connection with foreign transportation except in conjunction with vessels documented under United States laws. The Interstate Commerce Commission may, however, suspend the application of this section, where in the opinion of the Shipping Board, adequate facilities are not provided by American vessels. This discrimination in favor of our shipping is another example of the advantages sought to be gained for the American merchant marine by this shipping legislation, without a resort to measures of direct subsidy, both cham-

pioned and opposed so bitterly in earlier congressional consideration.

"The Board is directed to make rules affecting shipping in foreign trade, to adjust unfavorable conditions, and to co-operate with other Government Departments in this respect. Regulations of the Shipping Act, 1916, governing deferred rebates, "fighting ships," retaliations and unfair discrimination are further strengthened by an amendment regarding violations by aliens and the certification of such acts to the Secretary of Commerce. Coastwise shipping laws are extended to Island possessions after February 1, 1922, thereby restricting trade between the United States and these possessions to American vessels, provided adequate American service is established and maintained. Mails are to be carried, so far as practicable, on vessels American-built and documented.

"(3) The instructions governing the liquidation by the Board of Government-owned Shipping authorize and direct the sale of all vessels. Selling prices are to be judged on the basis of a business disposing of property which it is not forced to sell. Completion of payment cannot be deferred beyond fifteen years. Vessels considered unnecessary to the American Merchant Marine may be sold to aliens if no market for them exists here; in this case payments may be deferred for ten years. The Emergency Fleet Corporation is authorized to continue in existence until all vessels are sold. Previous legislation limited its life to five years from the cessation of the war.

"Proceeds from the disposal of this property, except for the special funds authorized, and for operating capital, are now directed to be turned in to the Treasury.

"(4) The Shipping Board is directed specifically to investigate the establishment of new or additional steamship lines for the development of foreign and coastwise trade and adequate postal service. It is authorized to sell or charter vessels for these lines or, if necessary, to operate and maintain them until they can be sold or are found not self-sustaining. Government service paralleling private American service shall not, however, charge lower rates.

"The Board is also directed to co-operate with the Secretary of War in promoting and developing ports and their facilities, and to investigate terminal equipment."

Webb-Pomerene Act.—Under the Sherman Act, competitors cannot consolidate their interests if the effect is to fix prices or restrict output. It was felt for a long time that since American merchants had to meet foreign combinations, permitted and even aided by foreign governments, in the struggle for foreign markets, some allowance should be made for business combinations that would not affect domestic commerce but that would have the necessary organization to meet foreign combinations on an equal footing.

As a result of this agitation, the Webb Law was passed in 1918. It provides in effect for any method of combination so long as the result does not injure domestic interests. These companies or associations all come under the jurisdiction of the Federal Trade Commission. Three methods of organizing such concerns have come into use, and the large number of Webb Law associations now working under permit have assumed one or the other

of these forms, with suitable variations, to meet special needs. The first form is a tentative association, formed for the purpose of investigating markets and market conditions. It enables a number of manufacturers, expecting to enter the foreign field, to pool their resources and conduct a joint investigation. Upon the result of their findings will depend whether or not the members decide to form a more permanent and effective organization. The second form is a trade association, as its members retain their individual selling organizations. They form a Webb association to remove the more vital features of competition, make price agreements, divide the territory, establish a uniform credit bureau, etc., but each sells its own goods as directly to foreign buyers as if the association did not exist. In the third form, the real Webb corporation follows the model so common in foreign countries, where the members of the corporation form a joint stock company, or a corporation, in which the members hold stock on some prearranged basis—production capacity, last year's export sales, capital stock, or some other equitable basis. The company maintains a central office, which manages all the export business of the member companies. The central office handles the sales force, the credit bureau, the investigating department, and clears all sales. Orders are allocated according to prearranged plans set forth in the by-laws, on the basis of priority, production capacity, ability to fill the order promptly, etc. The members are under contract to allocate a certain percentage of their total output to foreign trade to be sold by the company as it can. The expenses of the company office

are paid out of the working capital, paid in as needed by the member producers. The Webb Export Corporation does not tie the hands of a member producer. If he feels inclined to do so, he can send his own salesmen into the foreign fields, but all orders so received must be reported to, and cleared through, the company office.

Foreign trade financing.—In financing foreign trade, two questions must be asked: Can the foreign buyer pay? How will he pay?

In granting credits to foreign customers, not only must the risk involved in the person or concern be considered, but care must be shown in selecting the market generally. The internal conditions of the country, the position of its banks, the budget balance of the nation, the political risk, the condition of exchange,—all these questions are of real importance. The concern itself must be carefully investigated, and since conditions are as they are in most countries, only late statements should be relied upon.

To get credit information, we may rely on the large American banks, trade associations, and such associations as the National Association of Credit Men and the Philadelphia Museum. Much data can be obtained through the Bureau of Foreign and Domestic Trade of the Department of Commerce. As a speaker before the Ninth National Foreign Trade Convention said, "while the three C's of a credit grantee's qualifications are generally agreed to be character, capital, and capacity, those of a grantor in foreign trade are care, courage, and confidence."

In making payments, the foreign house may rely on an open account, or it may pay cash or accept a sight or

time draft. The open account is generally too hazardous and the requirement of cash, in a competitive market, is actually impossible. Hence the draft is most frequently used. Very often drafts are drawn on foreign banks and accepted by them. The foreign bank does this because it is better able to gauge the credit standing of the foreign purchaser than the exporter, or better able than an American bank would be, to whom the exporter might take the purchaser's accepted draft. Where such a procedure is used, the steps would be as follows: "The draft would be (1) discounted or purchased by the American bank, (2) sent to the London correspondent of the American bank, which would (3) present it to the London bank on which it is drawn, for acceptance. The draft would then (4) be sold in the London discount market and (5) the funds credited to the American bank which (6) is in a position to sell drafts against this balance which has been created. The holder of the draft who purchased it in the London discount market would (7) present it for payment on the due date. (8) Before this date the bank which has accepted the draft will have been put in funds by the buyer of the goods." ¹

How American banks can do a foreign banking business.—Our large American banks have been anxious to assist in foreign trade financing. They have established foreign branches, have affiliated with banks that have direct connections and they have organized Edge Law banks. Edge banks take collateral from foreign buyers and sell their own debentures against them, thus getting the funds

¹ Kidd's *Foreign Trade*, pp. 154, 155.

to pay the exporter for his shipments. It is contemplated that the collateral taken from foreign buyers may even be in the form of mortgages on their properties.

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CHAPTER XXIV

CREDIT

CREDIT AS A FACTOR IN BUSINESS

What is credit?—Credit is present purchasing power, growing out of the potential or future paying power of the borrower; and the extension of credit on the part of the lender is contingent upon his estimate of the willingness and ability of the borrower to repay according to the terms of the agreement under which the credit is extended.¹

Government bonds, bank notes, checks and promissory notes are typical instruments evidencing or implying the extension of different classes of credit and recording the promise of the debtor to pay. For convenience, we may speak of such instruments themselves as forms of credit.

It is readily seen that the value of a credit instrument depends upon the amount of confidence which the creditor has in the debtor—that is, in the debtor's ability and willingness to keep his promise.

Credit—at least in many of its forms—is scarcely to be distinguished from money. Where the credit is unquestionably good, as in the case of bank notes and other forms of currency issued under the sponsorship of a stable government, the credit instruments are called money. Personal checks also, if the maker is known to

¹ For a discussion of the nature and origin of credit, see the chapter on "Banking."

be responsible, are for practical purposes a substitute for money.

The uses of credit.—Credit, like money, is primarily or fundamentally a medium for the exchange of goods, more convenient and more elastic than money itself. With respect to its economic functions, it is a means of placing the immediate possession or control of capital in the hands of those who are best fitted and most willing to assume the duties and responsibilities involved in carrying on the operations of industry. The grantor of credit, however, reserves the right to pass upon the fitness of the applicant to assume control of the tools and materials of production and also to pass upon the probability of the applicant's redemption of his promise to repay. A satisfactory rating as to "character, capacity and capital" is the usual condition upon which credit is granted, but there is, perhaps, another factor in the situation which should more generally be taken account of—the economic value of the credit applicant's proposed activities. The reason for this is that the safety or stability of the business world depends upon a proper adjustment of production to consumption. Such an adjustment involves more than a mere adjustment of supply to demand—it involves a conscious and intelligent control or direction of supply and demand.

Economic considerations in credit extension.—In times of apparent prosperity the fundamental needs of the consumer may be lost sight of; and an undue proportion of productive energy may be diverted from the creation of necessities to the creation of luxuries. With an unlimited amount of credit available for the securing of

the right of the borrower to employ the instruments of production almost at will, with the direct object of realizing the largest pecuniary profit, the necessary "balance" of production may be destroyed.

Hitherto there has been practically no attention paid to the economic aspects of a projected enterprise on the part of the grantor of the credit through which capital for the enterprise is to be secured, although the ethical or moral aspects are often taken into consideration. Many capitalists, for example, would refuse to lend their money for establishing a race track, on the ground of "principle." If, however, a clear view of the fields of production could be obtained, it would seem to be fully as immoral for the capitalist to finance a non-useful enterprise, especially if it were apparent that there was an impending scarcity of some essential product. It is true that conservative bankers and other experienced credit grantors do scrutinize very carefully the uses which are to be made of the loans which they make, but they do so chiefly with a view to determining whether or not the proposed venture is likely to be profitable financially. They favor enterprises which have a sound economic basis principally because the production of essentials is more likely to be permanently profitable than the production of non-essentials and thus to provide a greater measure of security for the repayment of the loan.

The alternative for careless credit granting is government supervision. To a certain extent this process has already taken place in respect to investment credit. The Blue Sky laws of many States are intended to give to the Government the right to supervise those who undertake

to offer their credit in exchange for the capital of prospective investors. (See page 156.)

During the European War governmental credit-supervision was actually in effect. The obtaining of credit for new or additional undertakings was subject to the approval of the Capital Issues Committee, created by the act of Congress known as the War Finance Corporation Act, approved April 5, 1918. The Committee consisted of seven members, three of whom were members of the Federal Reserve Board, sitting in Washington. The Committee kept in touch with business throughout the country through sub-committees in each of the twelve Federal Reserve districts, which committees, serving without compensation, investigated and reported the various projects requiring capital in their respective districts. The Capital Issues Committee had power to:

"Investigate, pass upon, and determine whether it is compatible with the national interest that there should be sold, or offered for sale or for subscription any issue, or any part of any issue, of securities hereafter issued by any person, firm, corporation, or association, the total or aggregate par or face value of which issue . . . is in excess of \$100,000."

The Committee during the first few months of its existence concerned itself only with issues of stocks and bonds, but later extended its control to bank loans of over \$100,000.

If credit granting is to be scientific, credit grantors must understand the actual needs of consumers, the current production to satisfy those needs, and the potential production that might supplement the current output.

It is immaterial, of course, by what name any credit supervision or control might be called. The requiring of a license to be taken out before a business might be engaged in would have the same result as would the limiting of credit. This is a problem, then, which business must either solve for itself or have solved for it by the Government. It is understood, of course, that not all classes of credit are meant to be included in the term as used above, subject to such regulation, but only such credit as provides capital for fixed assets and in some cases, that which provides working capital. Credit extended to consumers, naturally, would not need so much regulation, unless in the case of credit used for the purchase of "luxuries."

The point of view of the credit grantor.—The problems involved in the control of credit extension, obviously, are beyond the scope of our present treatment of the subject of credit. It seemed necessary, however, to bring out the fact that these problems exist; for the grantor of credit, if he takes cognizance of them in his dealings with applicants for credit, may do much to promote the soundness of the structure of business, since practically all of the world's business is done on credit of one kind or another. The credit grantor need not attempt to solve the whole complicated economic problem, but will be doing his part if he refuses to grant credit except to such enterprises as he conceives to have an economic justification. He will assist in the production of what he regards as non-essentials only if he is convinced that a sufficient production of essentials is already assured.

There is little if any danger of an overproduction of

essentials, for an excess over market needs of one class of essentials can be stored for future use and the machinery of production concentrated upon the class of essentials in which a shortage may exist. If there is no such reserve, however, by reason of the surplus of productive energy having been devoted to the production of non-essentials, it will be much more difficult to make up a shortage which develops, for most of the machinery of production must continue, as before, to turn out that which is required for current needs, and cannot be diverted to the making up of the shortage.

The point of view of the credit grantor, then, will be one from which are considered the ultimate needs of the consumer as well as the "credit risk." The highest degree of safety and the greatest ultimate financial return for the use of credit can be secured, obviously, only if business in general is on the soundest economic basis.

FORMS OF CREDIT

Credit of general acceptability.—Credit of general acceptability, a substitute for money, is commonly known as money or currency. A Federal Reserve note, for example, recites the agreement of the United States of America to pay to the bearer on demand the amount of money specified on the face of the note, money in this case meaning gold of a certain weight and fineness.

Among the obvious requirements of general acceptability are: an unmistakable and unconditional written promise of the obligor to pay a specified sum of money on demand; a general belief that the obligor is able and willing to fulfil the promise; negotiability of the instru-

ment upon which the promise is recorded;¹ and positive means of identification of the instrument as being genuine and not a counterfeit.

In credit of general acceptability, however, we are not interested here, further than in pointing out its meaning and its place in the credit system. In the ordinary use of the term "credit," especially in matters of business, the credit referred to is credit of limited acceptability.

Credit of limited acceptability.—Credit becomes limited in its acceptability by reason of any of the following conditions: deferred date of payment; lack of explicitness in the promise to pay; lack of absolute financial competence or moral integrity of the obligor; non-negotiability of the instrument.

The important forms of credit of limited acceptability are:

- (1) Book accounts.
- (2) Promissory notes.
- (3) Bonds.
- (4) Stock certificates.²
- (5) Checks.
- (6) Drafts.
- (7) Bills of exchange.
- (8) Acceptances.
- (9) Money orders.
- (10) Travellers' letters of credit.
- (11) Commercial letters of credit.

¹ Negotiability in an instrument means that it may be transferred in such a way as to constitute the transferee the holder thereof, who acquires title in his own name and is altogether independent of previous holders.

² Stock certificates are not true credit instruments, but represent ownership rather than credit.

Book accounts.—Book accounts are the open-accounts receivable, due from customers for credit-sales made to them. The only evidence of these accounts in the hands of the creditor is an entry made by himself or his clerk in his own books. Naturally, this is not a very satisfactory evidence of the amount in case of a disagreement; and accounts in such a shape are not so useful as an asset as they might be in another form, for while they may be bought and sold, this usually can be done only at a sacrifice. The practice of selling book accounts is seldom resorted to except when the creditor is in financial difficulties. It may be noted that in different parts of the country corporations have been formed for the purpose of purchasing book accounts.

Book accounts, if good, are often a satisfactory collateral upon which the merchant may borrow money, but even this practice is discountenanced by merchants.

Promissory notes.—A promissory note is a written promise to pay unconditionally a specified sum of money on demand or on a specified date. Promissory notes are ordinarily given upon the occasion of the borrowing of money or the purchase of real estate or other property, when only a portion, or none, of the "consideration" is "cash." Notes are also taken by creditors in settlement of long-standing accounts "in order to get the matter into better shape," which means that, as an asset, a new note is better than an old open-book account. It is an obligation which the customer is likely to pay when it falls due, and one upon which suit may be brought, if necessary, without additional evidence of the debt, since it bears the debtor's signature. It may also be used as

security for a loan from the bank, or it may be sold outright.

When the merchant takes a note in settlement of a book account, he will see that the note bears interest, and may add to the amount of the note a sum sufficient to equal interest accumulated for the time the account has been due.

Promissory notes are classed as "secured" or "unsecured," with respect to whether or not there is a conditional transfer of property rights as a security for the satisfaction of the note; as "single-name" or "double-name" paper, with respect to the number of signers or indorsers of the note; and as "short-term" or "long-term" with respect to the date of maturity. "Commercial" or short-term notes are usually payable in not more than 90 days, although it is probable that any note of six months or less would be classed as short-term rather than long-term. Promissory notes may also be drawn payable "on demand;" or "on or before" the date of maturity. A demand note may be paid at any time by the debtor, and the creditor may at any time insist upon immediate payment. If the note is payable "on or before," the creditor may not compel payment until the date of maturity, but the debtor may, at his own option, make payment at any intervening time, the creditor being legally bound to accept.

Bonds.—A bond is a written promise, under seal, to pay a specified sum of money (usually \$1,000), at a fixed time in the future, usually more than ten years after the promise is made, and is usually one of a series of similar bonds, all carrying interest at a fixed rate.

Bonds are used, as a rule, as a means of obtaining capital for permanent needs, as for the purchase of fixed assets or the securing of permanent working-capital, while promissory notes are a means of financing operations that require additional capital for only a limited time.

Bonds may be "registered" or "bearer" bonds, in the latter case being transferable by delivery and in the former case by endorsement and delivery. They are usually excellent collateral upon which the holders may borrow money. Bonds may be "mortgage" bonds, i.e., secured by the mortgage of definite property, real and personal; "collateral" bonds, i.e., secured by the pledge of stock or bonds; or "debenture," i.e., wholly unsecured.

Since the bond is a long-term credit instrument, it is more commonly issued by corporations than by other business organizations or by individuals. The corporation has a longer expectation of life than has the individual or partnership form of business enterprise, and is also more subject to regulation by the Government, hence the bond of a corporation is more favorably regarded by the investor than is the bond of an individual or partnership.

Stock certificates.—While bonds represent money lent to the corporation, or other issuer of the bonds, and a definite obligation upon the part of the issuer to repay at the specified time, stock certificates represent ownership in the corporation or association, and not an obligation of the corporation to make any predetermined payment. Stock certificates, therefore, are not true credit-instruments. There is a promise, however, expressed or implied, of the corporation as an entity to return to the stock-

holder as an owner his predetermined or proportionate share of the profits, if any are made, and his proportionate share of the assets, in case the corporation is dissolved, this obligation being in consideration of money or capital advanced to the corporation to be used in the carrying on of its business for the purpose of making profits for its stockholders. Thus the corporation, although not liable to its stockholders for any specific payments, is liable to the stockholders for an accounting and a compliance with the agreement under which the shares were purchased.

Checks.—Of the various forms of credit instruments that have been evolved, the bank check is one of the most useful. It is an order addressed to a bank in which the maker of the check has funds on deposit, requesting the bank to pay upon presentation of the check, upon or after the date of the check, a specified sum of money to the person named as payee on the face of the check, or to his order. The check may be drawn payable to "cash" or to "bearer," in which case the holder may cash it regardless of his identity.

If payment should be refused by the bank on which a check is drawn, the check becomes in reality a promissory note payable by the maker on demand of the payee.

If the check is payable at the time it is made, as almost all checks are, and if payment is refused by the bank because of lack of sufficient funds to the credit of the maker of the check, the payee may have recourse not only to such legal proceedings as are open to holders of promissory notes in default, but in some States and under certain conditions may institute criminal as well as civil proceedings against the maker.

Certified checks.—A certified check is a bank check which bears the stamp of the bank upon which it is drawn, attesting the fact, in effect, that the depositor has funds out of which the check will be paid upon presentation, the bank assuming the responsibility for payment and, in order to protect itself, setting aside immediately a sufficient sum out of the depositor's funds to cover the check when it is presented.

Cashier's checks.—A cashier's check is an order on a bank signed by the cashier of the bank itself. Such checks are used by a bank in paying its own obligations, or may be issued, at a depositor's request, payable to a person designated by the depositor, against whose account the amount of the check is immediately charged. The cashier's check possesses the same acceptability as the certified check, since each is an obligation of the bank itself.

Bank drafts.—The bank draft, a form of check, differs from the cashier's check in that instead of being an order drawn by the bank upon itself, it is drawn upon another bank in which the issuing bank has funds on deposit.

Bills of exchange.—A bill of exchange is an order drawn by one person or firm upon another, requesting the person or firm upon whom it is drawn to pay, upon presentation or at a specified time thereafter, a specified sum of money to the person or firm named as payee on the face of the instrument. The payee may be, and usually is, the same person as the drawer of the bill.

A domestic bill of exchange—that is, a bill payable in the country of its origin, is called a commercial draft.

Commercial drafts most often arise in transactions

such as a sale of goods by one merchant to another, often to a consignee in a distant city, the draft being made payable to the drawer himself or to an agent whom he deputes to make the collection. Shipments are frequently made "sight draft attached to bill of lading," which means that the person to whom the goods are shipped must pay the draft before the bill of lading, which carries title to the goods, will be released, i.e., given to the consignee by the person who holds it pending payment of the draft. Upon payment of the draft the consignee gets the bill of lading, presents it at the freight warehouse, and receives his goods.

In foreign trade the shipper makes use of the bill of exchange in the same general manner, but on account of the length of time goods must be in transit before the consignee receives and pays for them, the practice is to sell or discount the draft with bill of lading attached at the shipper's own bank, which bank then forwards the instruments for collection by a correspondent in the foreign city.

Acceptances.—Acceptances are drafts which have been presented to the drawee and which he has agreed to pay. A description of the different forms of trade and bankers' acceptances will be found in the chapter on "Banking." Acceptances are rapidly replacing open book accounts in credit transactions between merchants. The passage of the Federal Reserve Act made the use of acceptances especially desirable, for under the act a practically unlimited amount of currency may be issued against short-term commercial paper. Acceptances, accordingly, can readily be converted into money. The

increase in the use of acceptances is not surprising, for in addition to its being convertible into money, the acceptance has many advantages over the open book account. It is a much better evidence of the debt; it definitely makes possible the prompt collection of the debt, and it may readily be negotiated by the holder.

Money orders.—Postal and express money orders are orders to pay, drawn by the post-office or express company upon itself, through an authorized employee, and are payable to the order of the designated payee upon presentation at the designated office of payment.

Traveller's letters of credit.—The circular letter of credit used by travellers in foreign parts is, practically, a bank draft drawn upon a number of foreign banks collectively, requesting them, or any of them, to pay to the holder, in such installments as the holder may require, an aggregate amount not to exceed that specified in the letter of credit. Each payment when made, of course, is shown upon the letter, so that subsequent payors may know how much remains to the traveller's credit. The correspondent banks are reimbursed by the issuing bank for whatever amounts they may have paid to the holder of the letter.

Commercial letters of credit.—The commercial letter of credit is used to enable an importer to make payment for goods shipped by a foreign merchant. Having arranged for the necessary credit at his local bank, the importer forwards to the foreign merchant the commercial letter of credit, which letter authorizes the shipper to draw on the issuing bank up to the amount specified in the letter of credit. Shipment of the goods may be made

under a bill of lading made out to the order of the issuing bank. The shipper then discounts the draft at his local bank with bill of lading and other shipping documents attached. From here they are forwarded to the importer's bank—the bank which issued the letter of credit. This bank, upon receipt of the documents, reimburses the foreign bank at which the shipper discounted his documentary draft as authorized by the letter of credit.

The procedure in the use of bankers' domestic acceptances is much the same as that described above. The purchaser living at a distance from the seller—both, however, being within the United States—arranges with his bank to "accept" a draft to be drawn upon it by the shipper of the goods. This "bankers' acceptance" is equivalent to a cash payment, from the point of view of the shipper, for it is an obligation of a bank and therefore readily negotiable. For a description of acceptances see the chapter on "Banking."

Specimen letters of credit—traveller's, foreign commercial and domestic commercial—are shown herewith.

LADENBURG, THALMANN & CO.

No. 00000

AMOUNT, £1,000.

New York, December 1st, 1917.

To Messrs. the Banks and Bankers.

Mentioned on the accompanying list of correspondents.

GENTLEMEN :

We beg to introduce to you the bearer of this letter, *Mr. John Doe of New York*, in whose favor we have opened a credit for say, One Thousand Pounds Sterling, with The Union Bank of Australia, Ltd., London, to be in force until July 1st, 1918.

We request you to negotiate——demand drafts on the above mentioned firm bearing the clause drawn against L. of C. No. 00000 of L. T. & Co. N. Y." on the most favorable terms, deducting all your charges and endorsing all payments on the second page in the same currency in which this credit is issued.

Recommending Mr. Doe to your best attention.

We remain, Gentlemen,

Yours truly,

L. T. & Co.

SIGNATURE OF BEARER OF THIS LETTER OF
CREDIT WILL BE FOUND ON ACCOMPANYING
LETTER OF INDICATION.

Please return this letter to us after the last payment has been made.

Circular Letter of Credit

Credit No. 1234

\$5,000

GUARANTY TRUST COMPANY OF NEW YORK

New York, January 15th, 1918.

To Messrs. Fulton & Co.,

New York.

DEAR SIRs:

We hereby authorize your drafts on us, drawn at three (3) days sight for account of *Messrs. A. Brown & Co.*, for any sum or sums not exceeding in all Five Thousand Dollars.

The drafts must be drawn prior to July 15th, 1918, and advised to us at the time of drawing.

And we hereby engage that drafts drawn in compliance with the terms of this Credit shall be duly honored on presentation.

GUARANTY TRUST COMPANY OF NEW YORK,

JOHN DOE, *Pres.*,

RICHARD ROE, *Secy.*

N. B.—Please mark drafts: "Drawn under credit No. 1234, dated New York, January 15th, 1918," and the amount of each draft is to be endorsed hereon.

Domestic Letter of Credit (Commercial)

Credit No. 1234

\$50,000

GUARANTY TRUST COMPANY OF NEW YORK

FOREIGN DEPARTMENT

New York, December 1st, 1917.

Messrs. Gonzales Hermanos,
Pernambuco.

Gentlemen:

We hereby authorize you to value on GUARANTY TRUST COMPANY OF NEW YORK, NEW YORK, for account of *Messrs. John Simpson Sons & Co.*, up to an aggregate amount of Fifty Thousand Dollars, U. S. ccy., available by your drafts at ninety days sight against shipment of coffee to New York. Insurance covered by buyers.

Bills of Lading for such shipments must be made out to the order of the Guaranty Trust Company of New York, unless otherwise specified in this credit.

CONSULAR INVOICE AND ONE BILL OF LADING MUST BE SENT BY THE BANKER NEGOTIATING DRAFTS DIRECT TO GUARANTY TRUST COMPANY OF NEW YORK, NEW YORK.

The remaining documents must accompany the drafts drawn on Guaranty Trust Company of New York, New York.

The amount of each draft, negotiated, together with date of negotiation, must be endorsed on back hereof.

We hereby agree with bona fide holders that all drafts drawn by virtue of this Credit and in accordance with the above stipulated terms shall meet with due honor upon presentation at the Office of Guaranty Trust Company of New York, New York, if drawn and negotiated prior to July 31st, 1918.

GUARANTY TRUST COMPANY OF NEW YORK,

JOHN DOE.

**N. B. DRAFTS DRAWN UNDER THIS CREDIT
MUST STATE THAT THEY ARE "DRAWN
UNDER LETTER OF CREDIT No. 1234.
\$50,000. DATED DECEMBER 1ST, 1917."**

Foreign Letter of Credit (Commercial)

TRUST RECEIPT.

Received from THE GUARANTY TRUST CO. OF NEW YORK the following goods and merchandise, their property, specified in the Bill of Lading per S.S. *South Star*
 Dated *December 1/1917* marked and numbered as follows:

A #150 = 50 Bales of Hides
 valued at ~~\$~~ 7500.-

and, in consideration thereof, $\left\{ \frac{I}{we} \right\}$ HEREBY AGREE TO HOLD SAID GOODS IN TRUST for them, and as their property, with liberty to sell the same for their account, and further agree, in case of sale to hand the proceeds to them to apply against the acceptance of THE GUARANTY TRUST CO. OF NEW YORK on $\left\{ \frac{my}{our} \right\}$ account, under the terms of the Letter of Credit No. *12345* issued for $\left\{ \frac{my}{our} \right\}$ account and for the payment of any other indebtedness of $\left\{ \frac{mine}{ours} \right\}$ to THE GUARANTY TRUST CO. OF NEW YORK.

THE GUARANTY TRUST CO. OF NEW YORK may at any time cancel this trust and take possession of said goods, or of the proceeds of such of the same as may then have been sold, wherever the said goods or proceeds may then be found and in the event of any suspension, or failure, or assignment for the benefit of creditors, on $\left\{ \frac{my}{our} \right\}$ part, or of the non-fulfillment of any obligation, or of the non-payment at maturity of any acceptance made by $\left\{ \frac{me}{us} \right\}$ under said credit, or under any other credit issued by THE GUARANTY TRUST CO. OF NEW YORK on $\left\{ \frac{my}{our} \right\}$ account or of any indebtedness on $\left\{ \frac{my}{our} \right\}$ part to them, all obligations, acceptances, indebtedness and liabilities whatsoever shall thereupon (with or without notice) mature and become due and payable. The said goods while in $\left\{ \frac{my}{our} \right\}$ hands shall be fully insured against loss by fire.

Dated, New York City *December 1917*

(Signed) *Fulton Co.*

\$1500.- / *f* Sigs.

(Given to Bank by Importer upon receiving shipping documents. A bailee receipt is also taken by the bank if the importer employs an agent to dispose of the goods)

BAILEE RECEIPT.

Received from the Guaranty Trust Company of New York,

solely for the purpose of selling same for account of said Company:

(50) Fifty Bags of Coffee

marked and numbered  1 to 50 incl.

and ~~we~~ hereby undertake to sell the property herein specified, for account of the said Company, and collect the proceeds of the sale or sales thereof, and deliver the same immediately on receipt thereof to the said Company, to be applied to the credit of \$ 10000. - of

hereby acknowledging ~~as bailer~~ to be Bailee of the said property for the said Company, and ~~we~~ do hereby assign and transfer to the said Company the accounts of the purchaser or purchasers of said property to the extent of the purchase price thereof, of which fact notice shall be given at the time of delivery of the said property by ~~us~~ to such purchaser or purchasers and all invoices therefor shall have imprinted, written or stamped thereon by ~~us~~ the following:

"Transferred and payable to GUARANTY TRUST COMPANY OF NEW YORK, 140 Broadway, New York."

If the said property is not sold and the proceeds so deposited within ten days from this date, ~~we~~ undertake to return all documents at once on demand, or to pay the value of the goods, at the Company's option.

The said goods while in $\left\{ \begin{array}{l} \text{my} \\ \text{our} \end{array} \right\}$ hands shall be fully insured against loss by fire.

The terms of this receipt and agreement shall continue and apply to the merchandise above referred to whether or not control of the same, or any part thereof, be at any time restored to the Guaranty Trust Company of New York, and subsequently delivered to us.

Dated at New York, December 17 1917

Fulton & Co.

600

(Given to Bank by Bailee, who is usually the agent or broker of the importer, in cases where importer employs an agent to handle the consignment on commission or otherwise.)

CLASSES OF CREDIT

Kinds of credit used in business transactions.—The various kinds of credit used in business transactions may be classified as being:

1. Investment credit.
2. Mercantile credit.
3. Banking credit.
4. Personal credit.

Investment credit.—Investment credit is that which is concerned with long-term loans or other investments, represented by such instruments as bonds, notes, real-estate mortgages, or stock certificates.

Investment funds are obtainable from individual investors, investment bankers, and from individuals or institutions acting as custodians or trustees of the funds of others, and in some cases from institutions, such as insurance companies, having surplus funds of their own to invest. Commercial banks, however, while they remain within their proper sphere of activity, do not lend money for investment but only make short-term loans, presumably for the furthering of legitimate mercantile or other transactions which are to be carried to completion within the period of the loan and which are often, although not necessarily, depended upon to furnish the funds out of which the loan will be repaid. For discussions of problems involving investment credit, see the chapters on "Financing" and "Banking."

Mercantile credit.—Mercantile credit is the credit extended by merchant to merchant, for the purpose of facilitating the movement of goods from the producer to the retailer—and ultimately, of course, to the consumer.

Credit, to the extent of the accumulated costs of the goods, must very frequently be extended by the manufacturer to the merchant, by the merchant to the jobber, and by the jobber to the retailer, the time in each case being sufficient to enable the purchaser to resell the goods and collect the money from his customers.

Successful merchants, whose business reputation and financial standing are good, have no difficulty in obtaining short-term loans from banks. They are enabled to take advantage of the numerous discounts for cash payments and of the many opportunities for making a "quick turn" on deals which require a little extra capital to handle. The merchant who cannot avail himself of such discounts and other opportunities for saving or making is at a hopeless disadvantage. The merchant who can finance his business altogether, however, without the use of mercantile credit, is rarely found.

The terms of mercantile credit constantly tend toward being of shorter duration, this being due to the greater speed with which business is now carried on, as compared with the time required to complete business transactions in the days when mercantile credit had its origin. Rapid railroad, motor-truck and steamship transportation and telegraph and telephone service are among the factors which have brought about a quicker turnover of goods. Terms of longer than sixty or ninety days are now exceptional, save in the businesses that handle expensive or slow-moving goods.

Since the establishment of the Federal Reserve System acceptances are supplanting open book accounts in mercantile-credit transactions. In cases where the credit is

in the form of an open book account, a discount will usually be offered for cash or prompt payment. Payment within 10 days is usually regarded as a cash payment. When goods are sold on terms of 30 days, for example, and the invoice is marked "2/10 net 30" the conditions are that, if the bill is paid within 10 days after the date of the invoice, 2 per cent discount may be deducted, the full amount of the bill being due 30 days after the date of the invoice, in case the discount offer is not accepted. In other words, the purchaser is penalized 2 per cent for deferring payment, and he is obliged to pay in any case in only 20 days more. The money which thus he borrows from the vendor costs him 2 per cent for 20 days, or $1/10$ of 1 per cent a day, or 36.5 per cent a year. It would seem that in such a case, which is typical, both vendor and purchaser must be badly in need of more working capital, else the one could not afford to offer such an inducement for early payment nor the other to neglect to accept the offer. In actual business practice, the rates of trade discount figured as above may vary from 6 per cent to 72 per cent a year. The obvious inference is, that merchants would do well to adopt the trade-acceptance system, by which the signing of an acceptance, or draft, becomes practically the equivalent of a cash payment, since the vendor can endorse the acceptance and discount it at the bank and allow the purchaser the benefit of "cash" prices.

Banking credit.—Banking credit is the credit which banks extend to business enterprises for the purpose of equalizing, or distributing, the financial burden of conducting a commercial business. The commercial bank in

no way disparages long-term investments, for long-term loans are fully as essential to business as are short-term loans, but the machinery of the commercial bank is not designed for handling any but short-term loans, based upon liquid or readily convertible assets.

The merchant who sells goods on credit and who must wait perhaps 90 days for payment, or the dealer who must pay cash for a stock of goods, borrowing the money from the bank and repaying the bank when he has had time (within 90 days, as a rule) to resell the goods, are examples of the users of banking credit.

Banking credit is thus seen to be closely connected with mercantile credit, since the merchant must often obtain banking credit for himself in order to be in a position to extend mercantile credit to his customers. He must have an adequate working capital, in order that he may be in a position at once to replenish his stock when it is depleted by sales to his customers.

In general, there are three methods by which the merchant may avail himself of the bank's readiness to make short-term loans on good security. He may secure notes from his customers and borrow money on them as collateral; he may borrow money on his own note without specific collateral, in which case he must present to the bank a satisfactory "financial statement;" or he may sell his own note on the open market, through a note-broker, by which means funds may be secured indirectly from other banks, if his own bank happens to be short of loanable funds.

The Federal Reserve Act has made very much easier the obtaining of ample banking credit by merchants of

satisfactory moral and financial rating. It would appear that shortage of "loanable funds" is a thing of the past in the country's banking system, for the supply of currency now increases or diminishes in accordance with the needs of business. The obvious effect of the Federal Reserve System with respect to the above-mentioned methods used by the merchant in "raising" money is to develop as a standard practice the securing of a note or "acceptance" from the customer who buys goods on credit, and the discounting of this acceptance by the merchant at his own bank. The use of the acceptance, of course, increases the merchant's contingent liability, since the acceptance bears his indorsement, and to some extent, accordingly, the merchant's personal borrowing power is diminished. This disadvantage is offset by the fact that funds secured by the discounting of customers' notes and acceptances should meet practically all the need the merchant has for banking credit. The borrowing of money on his own note, therefore, will less frequently be necessary, as will the sale of his own notes through a note-broker.

A more detailed consideration of banking credit as well as of the discounting of commercial paper, will be found in the chapter on "Banking."

PERSONAL CREDIT

Credit granted by the retailer to the consumer.—As distinguished from investment credit, mercantile credit, and banking credit—the credit granted to the consumer is called "personal credit." It may be noted here that while credit in general is an aid to business, enabling busi-

ness to be conducted on a larger scale and with greater facility, and also at less economic cost, than would be the case if the transfer of actual money were required in each transaction, these benefits of the credit system are contingent upon promptness of payment when an account is due, whether it is due in ten days or in ten years, and also upon payment without undue expense of bookkeeping and final collection. It is unfortunately true, that the retail credit system—that is, of the part of the credit system which involves what is known as personal credit—is far from standardized. Here, as in other departments of a business, lack of standardization means a continuous waste of time and energy.

The desire to do a large volume of business, to out-do competitors, leads the retailer to make it as easy as possible in every way for people to purchase his goods. It is much easier for the customer to select a few articles and have them charged and delivered than to pay for them and wait for the “change,” even if the package is not taken away at the time. Again, to be able to say: “Charge this, please,” somehow sets one apart from the persons who are required to pay cash, for fear that otherwise they would not pay at all. It is also convenient to be able to order goods by telephone. Not the least of the conveniences connected with the personal-credit system is the service of the merchant in keeping the customer’s accounts, and sending them at the end of the month, nicely arranged and all added up. Many people want to know the weekly or monthly amount of the milk bill, the butcher’s bill, the grocer’s bill, and the rest of the bills, but few would take the care to keep account of the items

if the items of each different purchase were paid for separately.

The need for getting goods on credit, accordingly, is one which is based on fundamental elements of human nature, and is a need which must be satisfied. There would be no economic advantage, even to the merchant, in doing away with retail credit. The records of sales should be kept in detail in any case, in order that the merchant may know the amount of his sales of each class of goods and who has bought them. The charge account saves the merchant's time as well as the time of the customer.

To make use of a trite form of expression, it is not the use, but the abuse, of the credit system that is so costly. Among the many who obtain credit, there are some who will not pay at all. There are others who will "dispute" their bills. There are others from whom collection can be made only with difficulty, and at an expense which may offset the nominal profit on the transaction, or on several transactions.

There are others, of the wealthier classes, who are too proud to pay a bill when it is due. They defer payment for much the same reason that others of their kind in a lower social stratum have goods charged instead of paying cash—they wish to remove themselves from the class of persons who are suspected of being either "hard-up" or dishonest if they do not pay promptly. Their patronage is such an honor to the tradesman, they seem to think, that he should not object to waiting a year or more for his money. Meanwhile, the merchant may be hard-put-to-it to keep his business going, and unable to give his

other customers the service which he would like to give them—service for which they pay, and to which they are entitled. His working capital is tied up in outstanding accounts.

The customers who pay, pay not only their own bills, but the bills of those who do not pay. They pay also the interest on the overdue accounts, and the cost of collecting them. They pay for the form letters, the postage stamps, the stenographer's time, and the repairs on the collector's shoes. They pay for the tacks with which the sheriff nails his notice to the bankrupt's door.

CREDIT RATINGS

Who is entitled to credit?—No one is entitled to credit—personal, mercantile, banking, or investment—unless he is able and willing to pay his debts at the time they are due. There are three ratings which should be satisfactory before any credit is extended—the moral rating, the personal-ability rating, and the financial rating.

The importance of the moral rating is so obvious that it need not be enlarged upon.

Assuming that the moral rating is satisfactory, the personal-ability rating should be considered in connection with the financial rating. The obligation rests upon the credit grantor to decide whether or not the applicant's projected use of the credit he desires is likely to be profitable, and whether or not the applicant has a sufficient amount of assets in reserve which he may draw upon in case more capital is required, either to provide additional financing for his business or to create a margin of safety for the security behind the loan.

It might seem that if the moral and financial ratings were quite satisfactory the credit grantor would not need to concern himself with the personal-ability rating, but this is not the case. Even if the applicant has a fund of assets in reserve sufficient to assure the repayment of the loan, the credit grantor has no right to advance capital which he does not believe will be used to the benefit of the applicant and, presumably, to the economic benefit of society. The world has outgrown the theory that a man's property is his own, to be used as he pleases. It is not possible, of course, for the credit grantor to constitute himself the sole judge of the economic value of an undertaking, and of its probable success as a business venture. He should, however, ascertain whatever he can as to the conditions which in any given case predetermine success or failure; and while it may be going a little too far to say that he should not extend credit unless he is convinced of success, he should at any rate refuse credit if he is convinced of failure, regardless of the fact that the applicant may have outside sources of funds with which he will undoubtedly be able to liquidate his obligation to the creditor.

Specifically, and in common practice, however, the basis upon which credit is granted or refused is the probability of payment or of non-payment of the loan at the time it is due. Judgment as to the probability of payment is based on a composite of the applicant's character, personal ability, and financial condition—ascertained from a consideration of his reputation, his record, and his financial statement.

The considerations which determine the amount of

credit to be given are very similar to those which determine whether or not any credit shall be given, the most obvious factors being the personal ability and the financial condition of the applicant—since it may be taken for granted that the moral rating must be good, if any credit whatever is to be extended.

Sources of information regarding the credit applicant.—In a personal interview with the applicant, the merchant or credit man can usually make an excellent guess as to the expediency of extending credit. Such judgments are not safe to rely upon, however. Besides, many applications for credit come from those with whom for some reason or another a personal interview is not to be had. The applicant, perhaps, may live a thousand miles away. In the world of business dealings, however, as in the world generally, something has been invented to meet every need. To meet the need for credit information, agencies of several types have arisen. These may be classed as general agencies, special agencies, and merchants' associations.

General agencies.—The "general" agencies are those of the Dun and Bradstreet type. Such agencies furnish their subscribers with special reports on the history, organization and financial strength of any house concerning which information is desired. They also issue rating books of business men, firms and corporations, with capital and credit ratings. In the rating books referred to, a series of letters or symbols, following the name of the person or house in question, indicates the credit rating, showing whether it is good, bad, or indifferent, and showing also the approximate amount of capital possessed by

the business. These books of names and ratings are sent to subscribers four times a year. The largest agencies list approximately two million names. Besides the complete list, State editions are also published. A few agencies make a special point of reporting on personal histories of individuals.

Special agencies.—In addition to the general agencies, of the Dun and Bradstreet type, special agencies have made their services available for the merchant, such an agency devoting its entire attention to particular lines of business; one may specialize on shoe stores, another on hardware dealers, and so on.

Merchants' associations.—One of the most-used sources of credit information is the file of credit reports compiled by merchants' associations. Thus we find, among retailers, that each town of any size has its "retail merchants' association," which is usually affiliated with State and national organizations. When a new customer asks for credit, the storekeeper calls up the local office of the association and asks for information concerning the applicant. If the applicant has just "moved" from another city, the secretary of the association gets a report on him from the association in the city of his previous residence. Likewise among jobbers and manufacturers, each industry has its association. However fiercely the members may compete against each other, they are united against the rest of the world, especially in protecting themselves against "bad-pay" customers, or against undesirable legislation. Thus members of an association of shoe manufacturers will freely give information to each other as to the habits of their customers—whether or

not they pay their bills—whether or not they return goods which should be kept and paid for, and the like.

Information from salesmen.—Another source of credit information which the merchant should constantly draw upon is the knowledge possessed by his own salesmen. The salesman comes in personal contact not only with the customers of the house, but also with competitors of those customers, as well as with the salesmen of other houses. Of course, it is understood that the merchant will not permit his salesmen to make themselves conspicuous, or obnoxious to customers or competitors, by prying into ‘other people’s business,” but the knowledge a salesman “picks up” legitimately should be considered the property of the house, to be turned in at every visit to headquarters, or, if important, to be transmitted by letter or by wire.

Information from banks.—Especially before extending a large amount of credit to a customer, the merchant would do well to ask his own banker for a report on the customer. Bankers, through their affiliations with other banks, are often in a position to obtain for a merchant valuable information concerning the financial condition of his customers.

Information from the applicant himself.—Again, before extending a considerable amount of credit to a customer, the merchant should ask for a financial statement—that is, a statement of the applicant’s assets and liabilities. If the customer is in good financial condition, he will be glad of the opportunity to give such a statement; if he is not, the merchant should, of course, regard the refusal to furnish a statement as a sufficient warning.

The statement, when obtained, should be carefully analyzed—it may contain elements of weakness not suspected even by the customer himself. The analysis of financial statements is considered at some length in the chapter on the subject of “Financial Statements.”

Information from attorneys.—For the securing of information concerning the standing of an applicant, especially of one in a distant place, an attorney in the town of the debtor's residence is often useful. Attorneys are likely to be aware of litigation in which the customer may be or may have been involved, and they usually know whether a man's reputation is “good” or “bad.” Lists of attorneys in all parts of the country are to be had from certain publishers, and by writing to the listed attorney at the place where the applicant resides the merchant can secure information which may be of value. Such information cannot always be relied upon, however, as the corresponding attorney may be prejudiced, or for personal reasons may give an inaccurate or incomplete report.

Information from credit men's associations.—Closely allied with the work of the merchants' associations, previously mentioned, is that of the credit men of the country. Every firm and corporation of importance has its “credit man”—a specialist—who devotes his entire time to the problems of extending credit and “getting the money” after credit has been extended. These credit men have their own associations, local and national, and maintain bureaus for the gathering and distribution of credit information; the principal such association is the National Association of Credit Men.

COLLECTIONS

Requirements of a collections system.—Every business should have a "system" for making collections—a system which will not only take care of ordinary collections in the regular course of business, but which will apply as a matter of routine the best methods for making collections from slow-pay customers. Customers who do not pay promptly are usually classed somewhat as follows: (1) Good, but slow; (2) "Dead-beats;" (3) Unfortunate. The system should be adapted for using different methods with each of these three classes.

The "tickler" system.—A bill, of course, should always be sent with the goods. The best practice is to let this bill inform the customer of the date upon which payment is expected. In the so-called "tickler system," a copy of the bill is made on a card and the card is placed in the "tickler file," where it will come up for attention upon the date it is due. Upon that date another bill is sent to the customer, and the card is advanced a reasonable distance ahead. When it comes up again, the credit man ascertains whether the bill has been paid or not, and, if not, mails another bill with a polite request for payment. With such a system as this, no account is neglected, or what may be as bad, disturbed too soon. Nothing seems to anger a customer more easily than a request for payment earlier than at the time agreed upon. If, for instance, the customer asks for an extension till a given date, the card will be advanced to a reasonable distance beyond the date agreed upon, and there the matter rests until the card brings it again to the attention of the credit man. In connection with this system, vari-

ous means of urging or enforcing payment are employed. Requests become more pointed, drafts upon the customer may be made through the merchant's bank, the account may be turned over to a collection agency, or, finally, legal steps may be taken to compel payment.

Dealt with by means of such a collection system as this, the "good but slow" class of customers will probably have paid before any unfriendly action is taken.

Collection from "slow-pay" customers.—It may be said that for the customer seeking merely to avoid payment, no course is too severe. Subsequent sales to such a customer are not to be made, and the only consideration is to get the money, by any means possible, as quickly as possible.

The remaining class, composed of those who would like to pay but are unable, on account of misfortune, to do so, are to be dealt with in an entirely different spirit. The merchant will give them every assistance he can, in the way of extending the time for payment, or even, in extreme cases, by lending them money, goods, or credit, so that they may regain their business footing and again become valued customers of the house.

Before the merchant can decide what course is wisest for the interests of his customer and also his own, he must secure a frank statement of the customer's condition. If the customer's character and business ability are good, and if all he really seems to need is more capital, the merchant will endeavor to help him to strengthen or re-establish his business. If, however, he is seen to be lacking in ability, even though his intentions be of the best, the wisest course may be to file a bankruptcy peti-

tion and let the creditors get what they can out of his assets before they are further diminished, and before the more insistent creditors are paid at the expense of the more patient. In many cases, however, a business is thrown into the bankruptcy courts by the ill-considered and hostile action of only a few of the creditors. Even after the filing of a bankruptcy petition it is not impossible for the creditors to come to an agreement with the bankrupt, under which he pays a certain proportion of his debts, equitably to each creditor. Such an agreement is called a "composition in bankruptcy." It is better for all concerned, however, if a similar agreement, called a "composition settlement," can be made before a bankruptcy petition has been filed. If a petition is filed and the debtor is adjudged bankrupt, and if no composition or adjustment is made, the property of the debtor is sold by a "trustee" elected by the creditors, and the proceeds are divided equitably among the creditors, after which the bankrupt is "discharged," free of all debts. If he has justly owed the debts, however, and is an honest man, he will eventually repay his creditors in full, although they can have no further legal claim upon his property.

CREDIT SAFEGUARDS

The credit guaranty.—The merchant who is doubtful of the credit applicant's ability or inclination to pay will often, before extending credit, require him to have the payment of the account guaranteed by some responsible person. Such guarantees may be general—addressed to the public—or they may be special, covering a single purchase, or successive purchases, from a single creditor.

Such a guarantee must be in writing, and any change made in the terms of sale between merchant and customer without the guarantor's consent makes void the guarantee. An extension of time for payment would be such an alteration, for instance. In some forms of guarantee, such as that recommended by the National Association of Credit Men, the guarantor waives notice of change in terms of sale, so that the guarantee is binding even where extensions are granted without consent of the guarantor. The guarantee may be terminated at any time by the guarantor, but he is, of course, liable for the payment of any debts already incurred.

Credit insurance.—A method of protection against extraordinary losses from bad debts is the use of "credit insurance." Briefly described, credit insurance is insurance which reimburses the policy holder for bad-debt losses. It does not cover, however, all losses up to the face amount of the policy. The merchant ordinarily loses a certain proportion of his accounts. This normal or expected loss is not protected, but is deducted from the face amount of the policy when settlement is made. For the purpose of the credit-insurance policy this normal loss, called the "initial loss," is the average of the merchant's losses for the five years preceding the taking out of the policy, or if the merchant has been in the business less than five years, the average amount of his credit losses while he has been in the business. Obviously, there would be no advantage in the protection, by insurance, of the "expected" or normal bad-debt loss, because an amount equal to this loss would unavoidably be added to the cost of the policy.

The justification of any insurance business, which is a costly one, requiring expert services that could well be utilized in more "productive" fields, is in that it is a means of distributing the business risk. Insurance, in reality, is only a shock-absorber for business. It is doubtful, however, if there is this justification for credit insurance, as the merchant's credit-risks are usually fairly well distributed. By building up a reserve for bad-debt losses, the merchant can provide himself with a "shock absorber" which is cheaper than credit-insurance.

The credit man.—To find and correct troubles at their source is the best way to deal with them. To prevent collection troubles from materializing—to avoid extending credit to those who are not entitled to credit—should be the business man's policy, more satisfactory than a credit-insurance policy and less expensive. The small merchant must learn the principles of credit-granting for himself; the larger establishment will make use of the highly trained and highly sensitive credit man, whose duties tend more and more to become those of a specialist. The thoroughgoing credit man, in order that he may be able to grant the right amount of credit in individual cases, must have not only the skill to analyze financial statements and to use the various sources of credit information, with respect to each particular applicant, but also to interpret the larger movements in the world of industry. Especially must he be skilled in the "barometrics of business," understanding the significance of such indicators of business condition as bank clearings and the ratio of reserves to deposits.

It is largely upon the credit man that the duty devolves

of adjusting the load-factor of the individual business in its proper relation to the carrying capacity of business as a whole; for the amount of credit extended, and the purposes for which it is extended, determine directly the nature and extent of production, which, obviously, should be adjusted to the consumers' needs, and as far in advance of these needs as may be possible, so that if the needs should change, or should prove to have been estimated incorrectly, production may be diverted into the proper economic channels before a waste ensues. Such a maintaining of the "balance" of business activities is a proper function of the credit man.

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FORECASTING BUSINESS CONDITIONS

The importance of business forecasting.—Every business man is more or less of a speculator. Even the humble cobbler, who comes as near to the wage earner as any independent enterpriser can come, speculates to a certain extent. He buys his sole leather and his rubber heels, his polishing material and his thread in quantities more than sufficient to last him for a day, and though his purchases are for convenience and not for taking advantage of price changes, he will get these advantages, or conversely lose them, if prices go up or come down. To the extent that he consciously takes advantage of the probable changes in prices he consciously attempts to seize one of the important sources of profits. Indeed, as the economists point out, if our competition system worked out smoothly, the cobbler would get no profits at all—he would simply earn a fair wage for himself. And the same thing would be true in more complex businesses—if the competition system worked with absolute precision, and if employees, capitalists and laborers all knew where their best opportunities lay, and promptly seized them, the enterpriser would make no profits. The business man who, in our imperfect system, where price changes are constantly taking place, can estimate supply and demand and who has the ability to govern his activi-

ties according to his estimates is the profit maker.¹ The business man who would be successful should not let too much of his business rest on chance or on the conclusions of a slightly-informed judgment. Purchases should be made with a reasonable knowledge of what prices will be obtainable for the products into which the purchased materials will enter and credit should be granted to those whose purchases are made on a safe basis of pre-information.

But the value of a business barometer that could tell us whether to expect an increase or decrease in business activity extends to other business men than manufacturers and dealers. "Government officials need a barometer when handling the problem of unemployment or when considering the advisability of inaugurating large government undertakings; * * * bankers need a business barometer to guide them in extending or calling their loans and discounts; and investors need one to direct their purchases and sales of securities."²

Barometers.—A barometer is an instrument for measuring atmospheric pressure and is used for forecasting weather. We know by experience that a "falling barometer" caused by a decrease in atmospheric pressure precedes a storm, that a "rising barometer" indicates the approach of fair weather and that a steady barometer indicates settled fair weather.

Business cycles.—Business has its storms and fair

¹ Any modern text on economics may be consulted for the theory of profits. See, for example, Ely's *Outlines of Economics*, Chap. xxv.

² Warren M. Persons, "Construction of a Business Barometer," *American Economic Review*, Vol. vi, p. 739.

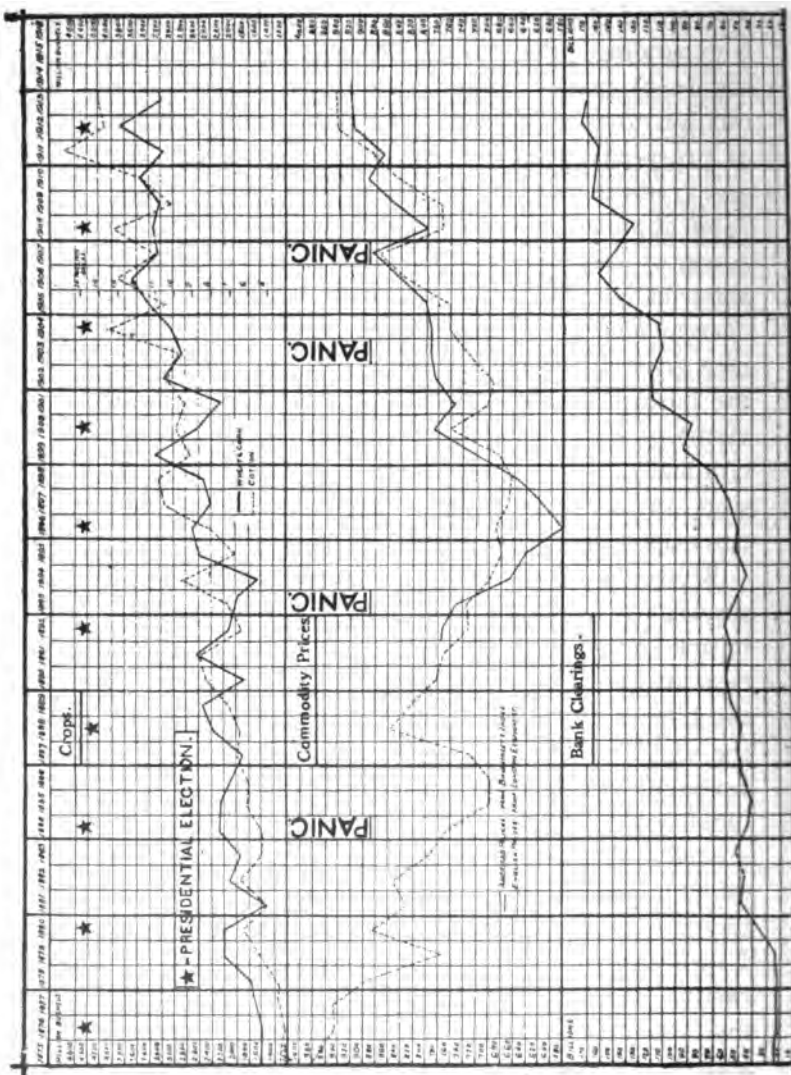
weather. These storms and periods of fair weather can be traced to causes that act with the same effectiveness as changes in the atmospheric pressure. We may start with fair weather—with business making fair progress. Prices rise. "Rising prices put money into the pockets of producers and those who are responsible for keeping the wheels of industry spinning."¹ This is the first stage of the business cycle and we may call it the period of improvement. It naturally develops into the second stage, the period of prosperity. Money is invested in fixed assets, such as plants and machines, with the intent of sharing in the general prosperity. Loans are freely made, especially on collateral whose value is constantly increasing. This process of "pyramiding" loans soon carries the business world beyond the point where values can be justified by earning power. Some large concern fails to pay interest on its loans, and the various concerns with which it has been dealing, unable to collect the moneys upon which they relied to discharge their own obligations, default on some of their debts. Banks become suspicious and call loans. In order to meet the call, borrowers sell securities and the selling increases the supply on the market sufficiently to depress stock-market prices. Margins disappear and more securities are sold. Values tumble. There is a panic and we find ourselves in the third stage, out of which we gradually emerge into the fourth stage, the period of depression in which readjustments are made and the business world gets ready to start the cycle over again.

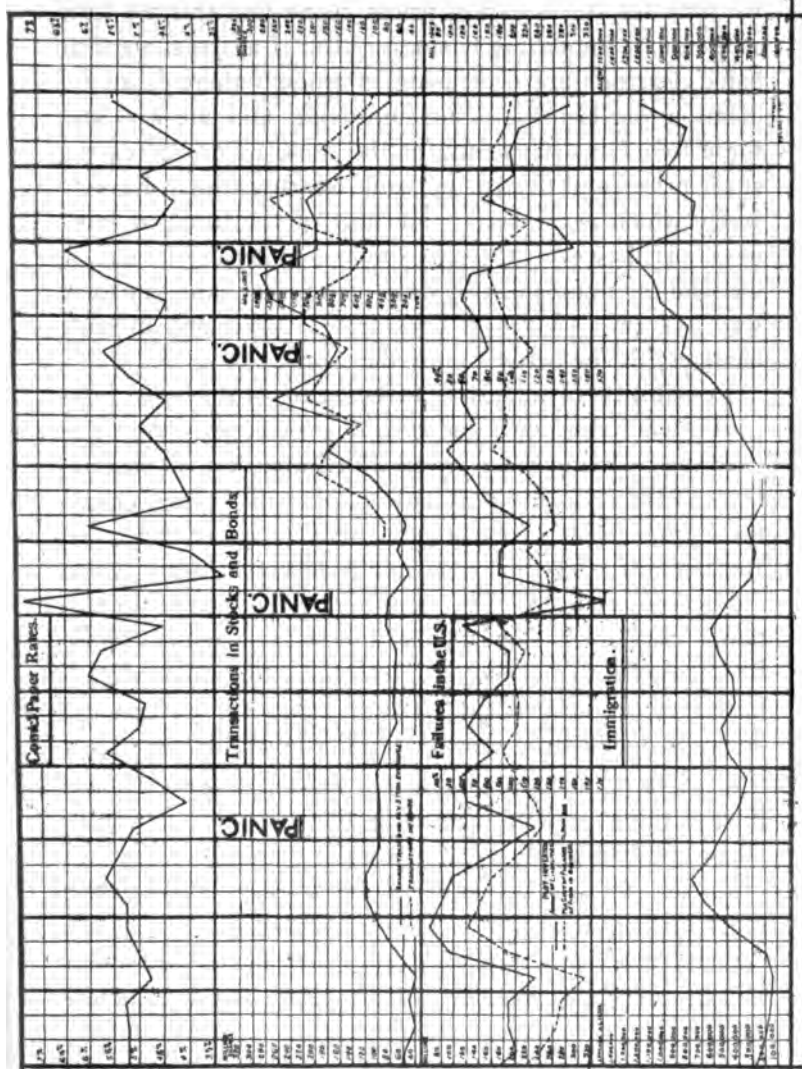
. It will be seen that these periods succeed each other as

¹ Hartley Withers, *The Business of Finance*, p. 49.

a result of changes in the credit situation. When credit is expanding, prices rise, since credit really increases the supply of money, and money really becomes cheap in relation to commodities. The panic follows the period of prosperity, because we tend to overextend credit, to give credit to people because they have property which we value at amounts larger than is warranted by the earning power of the property. The panic period contracts credit abnormally. It is a psychological reaction from the overconfidence of the period of prosperity, and business men generally do not recognize the credit of members of the business world to the extent to which they are, by virtue of their property and its earning power, entitled. Gradually, fear is overcome during the period of depression, and as credit is more freely recognized we again enter upon the period of improvement.

Studying fundamental business conditions.—Since conditions change and since a large part of the profits of business arise out of these changes, it behooves the business man to foresee as far as possible when these changes are likely to take place, the direction they will take, and the extent to which they will go. Not many years ago foresight was largely a matter of intuition. Men had "hunches." Perhaps this intuition was unconsciously guided by information, but there was little conscious effort to collect all the available information and to make the data thus collected the basis of reasonable judgment. Nowadays, such data are collected and are used for forecasting business weather conditions. The materials available may be used in their crude form or they may be statistically worked up into a so-called barometer. Thus





Some Pre-war Business Conditions

we may see stock-market prices rising and this we take as a sign of improving business. But if at the same time bank clearings are decreasing in amount there is an indication that business is not improving, and one who sees these two facts happening at the same time—increasing stock prices and decreasing bank clearings—will have to judge which is the better indicator of the trend of business. If, however, these two facts—or series of facts, if we take the figures day by day—can be combined in some way, we get a “business barometer” which will indicate changes for the better or for the worse.

Possibility of accurate forecasting.—Business forecasting with absolute accuracy will never be possible. The outcome of many forces over which man has no control, such as the relation of climatic conditions to the agricultural productivity of the country, will always be uncertain. But the major trend of economic conditions can always be foreseen in time to avert industrial disaster if basic economic laws are known. “The forces that primarily cause the alternation of boom and depression can be regulated, once they are understood. The severity of these ups and downs is due in large measure to the lack of adequate foresight, lack of general appreciation of the factors that influence the course of business prosperity, and failure to adopt corrective policies in season.”¹

In fact, there is no doubt in the minds of those interested in the subject of business forecasting but that the dangers attendant upon periods of business depression can be largely eliminated by intelligent study. While

¹ Prof. M. T. Copeland in address at First Federal Conference on Business Conditions Reporting.

business forecasting with absolute accuracy may never be possible, still, the same scientific procedure which has been used so successfully in other fields—say engineering and medicine—ought to be equally valuable in the realm of business and economics.

The basis of intelligent forecasting.—The basis of all intelligent forecasting is to be found in what is known in mathematics as the law of causality. This law holds that everything which happens necessarily happens as the consequence of a previous state of things. In order to predetermine what is to happen, one must be fully acquainted with what is happening. Commerce is continuous, and the stream which flows by to-day had its origin in the springs of yesterday. The problem of successful forecasting is entirely a matter of properly appraising existing forces.

How business conditions are measured.—While business conditions may not always be measured in statistical units, there is no better way to ascertain facts which enable the establishment of an opinion as to the trend of business. The field of commerce embraces the two major functions of production and distribution, subordinate to which we have labor conditions, business profits, the exchanges, and the money market. The activity of business may be measured from changing conditions in each of these fields.

Barometers of production.—Production may logically be divided into two fields, namely, agricultural and industrial.

Agricultural production is the greatest single factor which influences changes in business conditions. Good

crops usually bring prosperity because they determine (1) the purchasing power of the farming class directly, (2) the purchasing power of the industrial workers indirectly, and (3) the earning power of the railroads and other carriers. The harvests are large or small as climatic conditions are favorable or unfavorable; and the farmers have no control over these conditions.

Industrial production is regulated largely in accordance with the harvests, past and prospective. The following indices are used to determine the trend of industrial production:

- (a) the production of pig-iron;
- (b) the unfilled orders of the United States Steel Corporation;
- (c) the production of copper;
- (d) the production of bituminous coal;
- (e) the production of petroleum;
- (f) the volume of new building, from the permits granted and contracts awarded in leading centers.

The production of pig-iron has long been regarded as one of the best indices of current activity. This is because iron and steel are the basic products of industry.

Barometers of distribution.—Distribution may be divided into two fields, namely, transportation and marketing.

The activity of the steam railroads of the country in the transportation of freight is regarded as a good index of conditions. The traditional way of measuring railroad activity through the number of idle cars and gross revenues has been superseded by the better plan of compiling

records which show the number of freight cars loaded weekly.

Marketing activity may be gauged from the trend of prices, and from the volume of foreign and domestic trade.

The trend of price levels is a most important factor in business barometrics. Rising prices encourage trade just as falling prices have the opposite tendency. Price levels are measured by index numbers which are usually compiled monthly. The U. S. Department of Labor Index Number of Wholesale Prices for the month of June, 1922, was 150, which compared with a base of 100 for the year 1913. This would indicate that the general level of prices in June, 1922, was 50 per cent higher than in 1913.

The value of exports and imports, especially in our trade with Europe, is regarded as a valuable criterion of present and future conditions. Less valuable, perhaps, are the compilations which show the trade changes in the large retail stores of the country.

Barometers of labor conditions.—Statistics which show the number of persons employed, and the wages received, at representative industrial plants are now being compiled. These tables are of distinct value for barometric purposes. The number of immigrant arrivals is no longer regarded as an important factor because of the restrictive legislation which is now in effect.

Barometers of business profits.—The published reports of the earnings of the large corporations have a certain barometric value which, however, is largely nullified by the slowness with which the information becomes available.

The number of commercial failures is an especially good

index. Failures are few in periods of prosperity and numerous in times of depression. It is peculiar but true that a very low number of failures indicates danger in the form of a business relapse which is about to occur.

Barometers of the exchanges.—Because the operators on the various exchanges of the country are constantly endeavoring to discount the future, the movement of prices thereon is supposed to foreshadow the trend of business conditions. In times of depression, stock prices rise before conditions improve and in times of prosperity, stock prices usually recede before the height of the boom is reached.

The movement of prices on the commodity exchanges, for example, those of wheat, corn, cotton, iron, copper, and wool, is regarded as highly significant, since price-changes occur first on the raw materials of commerce before reaching the finished products.

Barometers of the money market.—The volume of bank clearings, that is, the checks handled by local clearing associations, is now regarded as being less valuable from a barometric standpoint than the volume of bank debits, that is, the total charges made against accounts at the leading banks.

Bank statements, which reflect the condition of the leading banks, especially the Federal Reserve system, are now regarded as being among the very best indices of current conditions. The condition of the banks shows the availability of credit in the country. The extent to which loans may be obtainable has always been a potent influence upon the trend of conditions.

The current interest rate, or the cost of borrowing, is

likewise a good index of conditions in the money market. A low interest rate reflects easy conditions and a rather inactive industrial situation. A high rate indicates both money stringency and industrial activity.

Composite barometers.—Seldom indeed, if ever, do all the barometers of business register uniformly. Pig-iron production during the last half of 1920 continued at a high rate although a distinct industrial depression began the same summer. Moreover, no single one of the business barometers is infallible. The "shadow which is cast before" must be sought as a result of considering more than one index of conditions.

The problem of constructing a single barometer of business based upon the various indicia available is most difficult. It has yet to be solved in a manner generally acceptable. In a professional way, the Babson, the Brookmire, and the Harvard University charts endeavor to accomplish this objective.

Bibliography of forecasting.—The number of books published on this subject is decidedly limited. Professor W. C. Mitchell's *Business Cycles*, published in 1914, remains the most thorough work of its kind. Professor D. F. Jordan's *Business Forecasting* has been used for much of the material in this chapter. R. W. Babson's *Business Barometers* contains many indicia in addition to those mentioned herein.

The *Survey of Current Business*, published monthly by the Department of Commerce, is an invaluable source of information. The *Federal Reserve Bulletin*, published monthly by the Federal Reserve Board, also contains much valuable statistical information.

Other books include: C. A. Juglar, *A Brief History of Panics in the United States*; T. E. Burton, *Crises and Depressions*; E. D. Jones, *Economic Crises*; and the publications of the Harvard University Committee on Economic Research.

CHAPTER XXVI

BANKING

BUSINESS AND ECONOMIC SERVICES OF BANKS

What banks are for.—The prime function of banks is to transmute credit into an exchangeable form; to provide means and facilities for the exchange of credit for other credit, money, or goods; and further, to adjust the amount and distribution of business credit to current needs or, more precisely, to current demand. Almost the entire business of the country is done on "credit" of one form or another, even most of the currency which passes from hand to hand being no more than subdivisions of the credit of the Government or of the issuing bank.

Incidentally, banks perform a number of other useful services, such as safekeeping of money and other valuables, but their activities outside of those implied in the foregoing paragraph are of minor interest.

Public credit and private credit.—Credit is of two general kinds—public credit and private credit. While the services of banks with respect to the handling of government and municipal bonds and other instruments representing public credit are of very great importance, and are furthermore very closely connected with those of their transactions which have to do primarily with private credit, we must take their public-credit services

for granted, and confine our present examination of banking functions to those which are concerned primarily with private credit, and more especially, with that phase of private credit which is known as business credit.

It may be noted, however, that public credit and private credit each are supported by the same assets, upon which the holders of public-credit instruments have a prior claim, although it is very rarely that such holders themselves, in the satisfaction of their claims, proceed directly upon the mortgaged assets, if such there are. The government or municipality, by a levy of taxes, secures funds with which to meet its obligations, and may foreclose on the property of individuals within the indebted tax district in order to secure from each individual his proportionate contribution toward the payment of the public obligation, which in some cases may be secured by a mortgage, but which usually rests upon the honor of the issuing government or municipality. The alternatives for a public bond-issuing entity are, usually, not payment and foreclosure proceedings, but payment and dishonor with loss of future borrowing power. Default is very rare. For our present purpose, public credit is made negotiable and acceptable by the guaranty of a government or taxing district, while private credit is, generally speaking, made so by the guaranty of a bank.

Private credit, of course, may come into existence, serve its purpose and be discharged without the intermediation of a bank, but this does not ordinarily happen. So closely is the bank identified with credit transactions that the common test applied with respect to the accepta-

bility of credit is, "Would it be accepted by the bank?"

The nature and origin of credit.—Since banks are primarily refiners (not creators) of and dealers in credit, we cannot have a just conception of the functions of banks until we have a clear idea of the essential nature of credit. In the chapter on "Credit" will be found a discussion of credit especially with respect to its formal characteristics and to its employment in business transactions. Here we must consider the elemental constituents of credit.

Briefly defined, credit is present purchasing power, growing out of potential or future paying power, which power itself grows out of the ownership of salable goods or the ability to render salable services. An "extension of credit" should be thought of, accordingly, primarily as an act of borrowing, not of lending. It is the exercise of the borrower's purchasing power. Much confusion has been caused by the fact that credit has too generally been regarded as something "granted" by the lender instead of as something exercised by the possessor, or borrower.

It may be worth while to make a further general classification of credit as being (1) primary or (2) secondary; that is, direct or indirect.

Primary, or direct, credit grows out of the immediate and outright ownership of salable goods or the ability to render salable services. (By "salable goods or services" we mean such as may be sold for money or exchanged for other goods or services.)

Secondary, or indirect, credit grows out of the future paying power possessed by the holder of a conditional

title to salable goods or services—specifically, by the holding of credit instruments known as “receivables,” such as bonds, promissory notes, and bills or accounts receivable, representing credit which has been negotiated or transferred. In this class of credit, the risk element has been discounted—that is, a margin of value above that of the face of the instrument exists to protect the holder against unfavorable contingencies; such credit, therefore, has a wider acceptability than what we have called primary credit, since it is negotiable and readily convertible into money. The distinction between primary and secondary, or direct and indirect, credit, is apparently recognized in the provisions of the Federal Reserve Act, under which act the extending of what we have called primary or direct credit, in the case of a single borrower from a national bank, is limited to an amount not to exceed 10 per cent of the capital and surplus of the lending bank; whereas secondary, or indirect, credit, represented by the customer’s “receivables,” if conforming in character to the requirements, may be discounted by the bank to an amount practically unlimited.

The available supply of credit.—The limitations upon the credit supply, so to speak, are fixed not by the amount of “loanable funds” in existence, but by the amount of marketable assets the titles to which may be hypothecated. Wherever salable goods or services exist, the owner thereof has a potential credit, corresponding to the market value of such goods or services, contingent upon his willingness and ability to make delivery. By “services” is meant, ability to produce wealth by the exercise of business, professional or manual skill or effort. Po-

tentially, then, the total amount of credit that exists or that can be called into existence is the sum of the market values of all existing goods and services. Credit cannot be created out of anything but these basic elements.¹

Effective credit.—The amount of credit effective at any given time, however, is only that portion of potential credit which is actually transmuted into active purchasing power, expressed in terms of money, and existing in a negotiable or exchangeable form. Conceivably, a man might own certain real properties, worth, say, \$100,000, owe nothing to anyone, and use gold in all his buying or selling transactions. He would in such a case be making no use of his potential credit of \$100,000. If then, however, he found that he needed more money, he might borrow, let us say, \$1,000, on his mere promise to pay. This \$1,000 would then be added to the "credit circulation" of the country, but there would still be a latent credit of \$99,000. Next, he might desire to engage in some business, for which purpose he needed \$50,000 in "cash." He could, presumably, borrow this by giving a mortgage on his property. Leaving out of consideration second mortgages, or "speculative" loans, this would represent, practically, the limit of his bankable credit, since there is presumed always to be a danger that the market value of real estate will decline. The

¹ Confidence accompanies credit so constantly that it is often said that credit is based on confidence. This cannot be true, for it is credit that gives rise to confidence. For the sake of illustration, the power to pay for goods by check is contingent on the confidence the seller has that the check will be honored—but this confidence grows out of the fact that the purchaser is known to have a bank account. The character of the borrower, of course, is vital, but is merely a condition upon which credit will be "granted." The credit itself grows out of the property of the borrower.

same holds good with respect to almost any other property upon which money may be borrowed. It is possible to borrow close to the market value, however, on bonds, notes, acceptances, and other transferable credit instruments, because allowance has previously been made for a decline in the market value of the assets behind them.

Summary.—By means of this rather crude illustration it may be seen that credit is no more and no less than purchasing power, latent or active; that credit, potential or active, may be measured in terms of money and tends to approximate the value of all marketable assets, this value being expressed, almost invariably, in terms of money; that credit becomes active and is put into circulation only in so far as it may be desired to exercise the available purchasing power; and that the value of the marketable assets upon the ownership of which credit is based is the estimated value as of the date when the credit must be liquidated, or retired from circulation. The greater the probability that the assets will not have declined in value at the time when the credit is liquidated, the larger the proportion of their present value which may be borrowed.

While credit tends, as we have observed, to approximate the market value of the assets behind it, as of the date of repayment, after 50 per cent of the estimated value has been utilized, in the case of primary assets, it is only with increasing difficulty and with higher rates of interest, becoming prohibitive, that the remainder of the latent credit may be made exchangeable. In the case of assets representing what we have called secondary credit, however, such as bonds and notes receivable,

an allowance has already been made for contingencies, and close to the face value may usually be borrowed from conservative lenders, at normal rates.

Banks as refiners of credit.—It is obvious that the purchasing power latent in the ownership of whatever has market value can be exercised in only two ways: (1) by direct exchange of the goods (or barter); (2) by reduction of the purchasing power to an exchangeable form, that is, to a “medium of exchange.” It is obvious, also, that if this purchasing power is to be reduced to a medium of exchange (money or its equivalent) the goods must be sold, either outright or conditionally. Title must pass, conditionally, at least, even if the goods themselves are not transferred.¹

The owner of the goods may desire to retain their use; in such a case he may “capitalize” his purchasing power by means of a conditional transfer of title, expressed or understood, receiving in consideration of this conditional transfer either the goods which he desires to purchase; or money; or a credit instrument of general acceptability (a substitute for money), with which he may make his purchase on the open market.

There are, of course, minor agencies through which credit—that is, purchasing power—may be capitalized. Individuals may constitute themselves such agencies; note-brokers and pawnbrokers perform such a service; negotiations may be carried on immediately with an owner of other goods which the purchaser wishes to ac-

¹ No attempt is made to go into the legal questions involved in real estate mortgages and in chattel mortgages. There was a time not very remote when every mortgage was regarded as a conveyance of the legal title to the mortgaged goods.

quire. The bank, however, is the agency of outstanding importance through which latent purchasing power is made active.

In order that potential purchasing power may be transformed into a medium of exchange, several things must be done. (1) The asset upon which the desired credit is based must be appraised—that is, its probable market value estimated—as of the date when the obligation is to mature. (2) A more or less formal conditional transfer of title to the asset, expressed or understood, must be made. (Such a transfer is always implied. In the event of default in payment, the creditor, through legal proceedings, may obtain and execute a judgment against the debtor's property, even if the property has not been specifically pledged as security for payment.) (3) In consideration of this conditional transfer the borrower must receive either money, or credit convertible into money or its equivalent, to an amount not to exceed the loan-value of the asset as appraised. If credit and not money is to be the medium of exchange received in consideration of the conditional transfer of title, the convertibility of the credit must be assured by the sponsorship of a responsible guarantor.

It is obvious that these several processes in the production of exchangeable credit are proper functions of a specialized institution such as the bank has become. Possessing originally a number of facilities, such as means of guarding and paying out funds, the bank has added the necessary facilities for "credit granting" in its modern form, maintaining its appraisers of assets; its legal staff; its means of assembling and interpreting "credit informa-

tion"; its clientele among whom it finds a market for securities; its accounting system; its sources of money funds; and its collecting system to facilitate the liquidation due and past-due accounts.

Facilities for credit-exchange.—The usefulness of the bank does not cease, however, with the completion of the process of transmuting credit into an exchangeable form and the delivery of the "finished product" to the borrower. It also provides facilities for exchange. It has made credit negotiable; it now provides means for the transfer of negotiable credit from one holder to another so that credit may answer the same purpose as money—with such economy in use that credit has actually displaced money as a medium of exchange in practically all except minor transactions. This has been accomplished by the development of the deposit and checking account system.

The nature of a bank "deposit."—A depositor may bring money or currency to a bank and "deposit" it, in which case he parts with his goods by actual delivery, receiving in exchange the credit of the bank to an equal amount, measured in money. More often he will bring to the bank his own credit, making a conditional transfer of title to certain assets, in consideration of which transfer of title he receives the agreed-upon amount of the bank's credit, or of his own credit guaranteed by the bank, which is for practical purposes the same thing. He has parted temporarily with the title to his assets, and has received for them the bank's credit in a usable form.

If it is money which he has deposited, he has "pur-

chased" a given quantity of the bank's credit. The bank "redeems" its credit as he may demand, and when the last dollar is paid, that is, "withdrawn," the transaction is completed. The bank has fulfilled its obligations and has rendered him the service of cashing his checks as he may have requested. The money he has withdrawn, however, is not the same money which he deposited. It has been money paid on demand in fulfillment of the bank's obligation, incurred by the acceptance of the deposit.

If, on the other hand, the deposit is represented by a promissory note, he has not purchased the bank's credit, but borrowed it, giving as security his own credit, which the bank, as a refiner of credit, is able to transmute into credit of general acceptability. The depositor may draw checks upon the bank until the deposit is exhausted and at the maturity of the note make repayment, and the transaction is completed.

The entire "deposit," obviously, and not only the part of the deposit which at any time may be represented by checks, is to be looked upon as a substitute for money—the greater part of which is added to the previously existing total of the circulating medium of exchange. At the time the deposit is created, of course, a certain amount of money is withdrawn from circulation to serve as "reserve against deposits," but this reserve is much less than the amount of the deposit.

How the bank makes its profit.—It may be assumed that the banker does not perform these services merely for the pleasure of handling money. The bank must make a profit. The interest the bank would get in return

for lending its own money, if it lent its own money (which it does not), would not be sufficient to pay its operating expenses, to say nothing of yielding a profit. Yet investments in bank stocks are commonly reputed to be exceedingly profitable. The explanation of the profit of the bank is in that the money or credit which it lends to depositors is not its own capital, but the credit resources of the depositors themselves, converted into money or its equivalent by the acceptance and guaranty of such resources by the bank. Practically, then, the bank lends depositors their own money at a rate of interest, and lends at least five times as much as it keeps in its vaults or in the vaults of other banks in the form of "cash" for reserves against demands. This practice, however, is quite safe and quite legitimate.

Lending deposits is a process in some respects so similar to the issue of notes, that a brief description of note issue may help to explain the deposit issue. Note issue was formerly a usual prerogative of banks, but is now practically confined, in the United States, to the Federal Reserve banks. In its simplest form, note issue may be described as follows: In the seventeenth century (about the year 1650), when bankers began to emerge from the guild of goldsmiths and began the business of collecting money in strong-boxes and lending it at interest, they discovered that their "depositors" drew out, on the average, from month to month, only a small proportion of the funds left for safekeeping. The "banker," therefore, found that he could safely lend most of the money entrusted to him, keeping merely enough cash in reserve to satisfy such demands as might be made. From this

situation was evolved the perfectly satisfactory custom of lending, instead of actual coin, notes redeemable in coin, the notes being transferable from hand to hand and redeemable upon presentation. It can easily be seen how this constituted a source of profit to the bank, for it could lend at interest, upon satisfactory security, an amount greatly in excess of the money held as reserves. The bank itself paid no interest upon its own notes, except perhaps in the form of an inconsiderable tax assessed by the government. In the United States, however, in order to encourage national banks at the expense of others, a tax of 10 per cent was imposed on notes issued by State or private banks.

It will be remembered that the raw material of credit is purchasing power based upon the ownership, legal or actual, of assets which have a market value—which, in other words, are ultimately, even if not immediately or conveniently, convertible into money. The bank takes this crude credit, with legal title to the assets, and transforms it into its own credit (which is readily convertible into money) and lends this credit to the borrower, holding the legal title to the pledged assets as security that the refined credit shall be returned to the bank at the specified time, to be reconverted into the original crude credit and given back to the borrower. This is accomplished simply by returning to the borrower the hypothecated title to the assets upon which both forms of the credit were based. Thus the borrower, not the bank, supplies the material out of which is made the money or credit which he borrows. The interest which the bank receives for the use of the "refined credit" extended is

very much more than the cost of the transaction—which consists simply in “passing” upon the applicant’s credit, accepting it, and issuing its own credit temporarily in exchange for the applicant’s credit.¹

It must be remembered, also, that while the credit which the bank lends the borrower is convertible into money (gold or legal tender) or current substitutes for money (Federal Reserve notes or bank notes) upon the borrower’s demand, the average borrower rarely makes such a demand except with respect to a very small proportion of the credit he receives from the bank. Most of his payments are made by check, and the checks drawn tend to offset other checks deposited, so that settlements are made, as a rule, merely by an act of bookkeeping. Behind each dollar of credit, however, there is an asset of sufficient market value, ultimately convertible into money, to insure the protection of the dollar of credit. Besides, there is the legal gold-reserve.

Certainly, if it were demanded that all the assets behind the credit of the banks of the country should be converted into money at the same time, this could not be done; for there is not sufficient money in the world to accomplish such an undertaking. It is safe to assume that such a demand, or any demand approximating it, will never be made, and that the demands for the conversion of nominally convertible credit into actual money

¹ We may say for convenience that the bank exchanges its own credit for the applicant’s credit, but it must be remembered that what we refer to as the bank’s own credit is really based largely upon the applicant’s pledged assets, which augment for the period of the loan the total resources or credit of the bank. The bank’s credit is based on the borrower’s assets, plus the assets directly owned by the bank itself.

will remain within the limits which experience has indicated are to be expected. It would be as unreasonable to question the soundness of the credit system because of the practical impossibility of redemption of all convertible credit in money as it would be to doubt the correctness of the valuations set upon marketable goods and property because of the fact that if all goods were required to be sold at the same time, there would not be enough money in the world with which to make even a reasonable partial payment at the given valuation.

The statement is often made, presumably as a well-meant warning, that what is borrowed in credit must eventually be repaid in money. The statement is correct, if we leave off the last two words. A lender requires the return of what he lends—not of something else. It is well known that credit offsets credit, and that nearly all of the world's business is transacted with credit as the sole medium of exchange.

The distribution of credit.—The banks then lend their credit or decline to lend it, thereby making or unmaking businesses, stimulating or discouraging production, or diverting it from one channel to another. They assume a heavy responsibility, but one which is unavoidable. They do not create credit, but have what is practically a monopoly of the process of making credit usable, which is almost the same as creating it, so far as their control of credit is concerned. Credit, of course, is controlled ultimately by supply and demand, but supply and demand are largely under the control of the banks. It is the duty of the banks to survey the fields of commerce and industry and to ascertain what the needs of business

are, and what they will be. The farther into the future the banks are able to project their sensitiveness to the needs of business, the better they are able to make provision for those needs and to prevent the economic waste that arises from various maladjustments.

Banks, like people, are actuated by selfish motives, but selfishness and humanitarianism, projected far enough into the future, tend to coincide. The banks desire first of all to make the largest profit which can legitimately be made, but their far-seeing policy might be expressed in the paraphrase: Seek first the stability of business, and profit shall be added unto you. The banks' stock-in-trade is credit; and credit, as we have seen, grows out of wealth, and wealth is increased by the processes of industry and commerce. Accordingly, while it might seem that the sole consideration which determines the granting or refusing of credit by the bank, assuming that it has loanable funds, is the willingness and ability of the applicant to liquidate the loan at maturity, the purpose for which the proceeds of the loan will be used is also a factor in the decision. The bank uses its judgment not only with respect to the safety of its credit, but also with respect to the probable financial success of the proposed undertaking which the applicant has in mind; and in a lesser degree, with respect to the economic value of the undertaking, granting that it is likely to be profitable financially. The tendency, at any rate, is for consideration to be given to the economic aspects of a proposed undertaking, even if for no reason other than that a business which is upon a substantial economic foundation is more likely to be permanently

successful than one which is not, and is therefore a better "risk," both with respect to the immediate loan and with respect to possible subsequent loans.

An interesting illustration of how the banks of the country may control the direction of the activities of business by the extension or non-extension of credit is seen in the following resolution, adopted by the board of directors of the Federal Reserve Bank of New York, July 31, 1918, while the European War was in progress :

"Resolved, That the directors of the Federal Reserve Bank of New York, in full sympathy with the views of the board (Federal Reserve Board), hereby direct the officers of the bank, in such ways as may be appropriate, to express to the banking institutions of this district the importance and necessity of conserving credit.

"By endeavoring to secure such gradual reduction as may be practicable of loans now carried for non-productive or non-distributive purposes ;

"By gradually reducing the amount of credit granted for purposes not clearly necessary for the prosecution of the war or the health and necessary comfort of the people, and

"By educating borrowers of all classes to keep their demands for credit down to the very minimum.

"Such a concerted campaign of action and education by the banking institutions of this district will surely lead to a spirit of economy in credit transactions, as well as to an actual saving of credit comparable to the saving already effected in food and other commodities, and will enable the Government to command the credit thus saved and use it directly and with full force for the winning of the war.

"It is of the highest importance, however, that nothing should be done to cause undue embarrassment to borrowers or affect necessary credits."

The purpose of this resolution was primarily to deflect credit from all uses which were not directly concerned with the prosecution of the war. It may be expected, from this beginning, however, that for the future, even in times of peace, the banks will endeavor, at least to some extent, to control the distribution of credit with economic ends in view.

Since banks can make or unmake businesses simply by extending or withholding credit, it is no more than was to be expected that their attitude toward business should have become somewhat paternalistic. That they have assumed a paternalistic habit of mind is not to be denied, although the fact is somewhat obscured by reason of its familiarity, and partly by reason of the necessity a bank is under of protecting its own credit as well as that of its depositors. This necessity compels a very careful scrutiny of each business which asks for credit. In the main, however, it must be granted that, whether paternalistic or not, the interest which the bank takes in the business transactions of its clients is helpful to the individual and to business as a whole.

A function of banks, therefore, is seen to be, by deflection of credit into the most economically productive channels, to bring about such a distribution of credit as will add most to the productive power of business as a whole; for exchangeable credit, or effective purchasing power, enables the holder to obtain possession or control of the machinery of production.

Credit and prices.—The question inevitably arises, if credit takes the place of money as a medium of exchange, almost to the exclusion of money, what effect does this have upon prices? Manifestly, this problem is such a complicated one that a discussion here would be profitless, since the problem is too difficult even to be presented in a few pages, much less discussed. Economists have not been able to agree among themselves as to what the extent of the influence is of credit currency upon prices. The best opinion seems to be that credit when accepted

as money tends to have the same effect as an increase of money, but that when credit currency comes into existence, new business-needs for money arise, so that there is not necessarily an actual increase of money in relation to the demand for money. Since, however, credit currency circulates more than twice as rapidly as money does, the supply of money is to that extent effectively increased. Here, again, of course, the increased velocity of circulation gives rise to the possibility of new business-undertakings and a consequent increase in the demand for money.

Corrective measures, however, in case of an apparent superabundance or scarcity of the medium of exchange, are practically futile, as explained by Taussig,¹ for the reason that prices respond so slowly to changes in the quantity of money that prediction is not easy.

"The best check," says Professor Taussig, "to the regular fluctuations in the uses of credit devices is that they shall rest securely on specie, and that all forms of them shall be redeemable without fail in specie. So long as this is done, there will be neither very wide fluctuations in the course of any one generation, nor very abrupt fluctuatons at any time."

The opinion quoted above was given before the outbreak of the war, and before the establishment of the Federal Reserve System. The credit currency arising from rediscounts under the Reserve System is, of course, redeemable in gold, and it would seem that the country's monetary system is on as secure a foundation as could have been laid. The correctness of this statement has been

¹ *Principles of Economics*, p. 443.

demonstrated since the close of the European War. The wide and abrupt fluctuations in foreign currencies that occurred in 1920 and 1921 were largely traceable to the disappearance of a specie basis from the monetary systems of European countries. While America remained on a gold basis, even here the difficulty in obtaining gold contributed somewhat to the derangement of our economic system.

CLASSES OF BANKS

Classification of business needs.—Naturally, in this age of specialization, banks with special facilities have been evolved in order to meet the needs of business for several more or less distinct kinds of banking service. The needs of business with respect to credit are, primarily, for long-term credit and short-term credit. The former is generally associated with industry, the latter with commerce. The distinction between industry and commerce, however, is merely incidental and not fundamental. The practical distinction is in the length of the term of the loan.

Long-term loans, generally, are needed for the purchase of permanent capital and for the securing of funds to serve as normal or regular "working capital" as distinguished from funds to satisfy some seasonal demand.

Short-term loans are needed for equalizing the variable demands for "working capital," month by month. A manufacturing or industrial enterprise may have as legitimate a need for short-term loans, from the standpoint of banking, as may the merchant, whose needs are in greater proportion, however, for short-time loans.

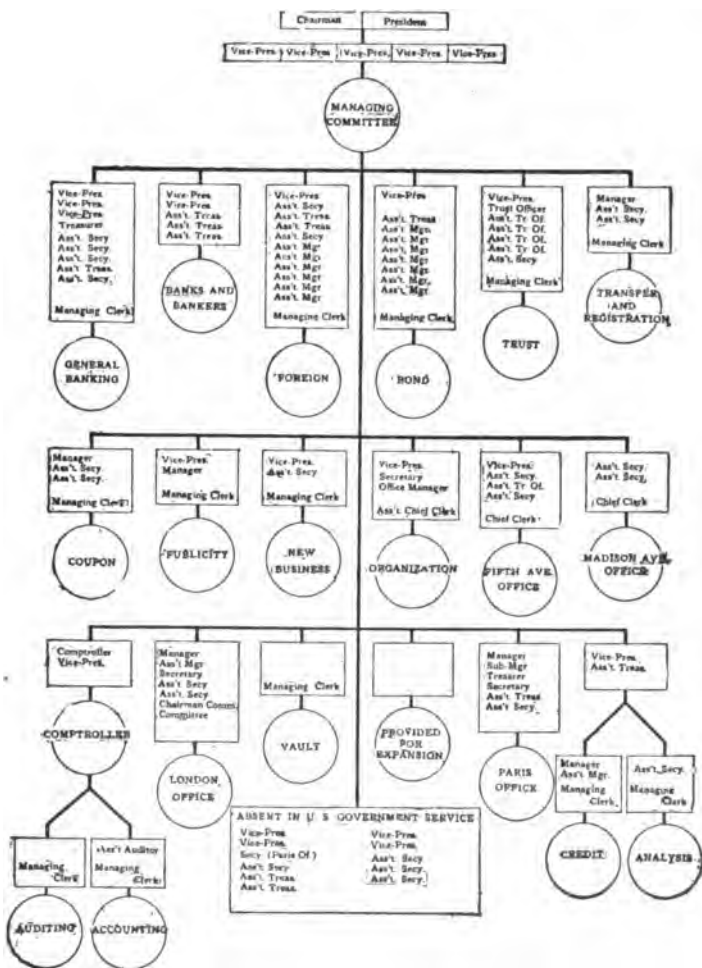
The commercial and other "business banks" themselves, which distribute credit according to the current

needs of business, whether these needs are for long-term credit or short-term credit, are dependent for banking credit upon banks in the financial centers, and, particularly, upon the recently established "Federal Reserve" banks. Banks of this latter class—which supply exchangeable credit to business banks—are called "bankers' banks."

Classification of banks.—Corresponding to the three needs of business, noted above, for long-term credit, short-term credit and bankers' credit—we have three classes of banks—investment or "industrial" banks, commercial banks, and "bankers' banks."

It may be noted here, that while the task of supplying short-term business credit devolves almost exclusively upon the so-called commercial banks, these commercial banks do not restrict themselves by any means to the making of short-term loans. While it is rarely that long-term loans are made to depositors, such banks do invest a large part of their resources in the purchase of long-term securities, which is practically equivalent to making long-term loans, or to lending for investment purposes, with this distinction, however—that such securities, while not redeemable by the issuing corporations, are really quick assets, convertible into cash in the ready market of the stock exchange. There is, apparently, no objection to the custom referred to, if it does not interfere with what has come to be looked upon as the proper function of the commercial bank—the supplying of short-term credit in such quantities as may be required.

With respect to the most conspicuous services they ren-



ORGANIZATION OF A BANK
(Guaranty Trust Company of New York)

der, banks, then, may be grouped as follows, the descriptive group-titles being, however, only approximately justifiable, but as little misleading, perhaps, as any that could be found:

1. Industrial banks.¹
 - (a) Investment banks
 - (b) Trust companies
 - (c) Savings banks
 - (d) Rural-credit banks
2. Commercial banks.
 - (a) Private commercial banks
 - (b) State banks
 - (c) National banks
3. Bankers' banks
 - (a) Metropolitan commercial banks.
 - (b) Federal Reserve banks

Industrial or investment banks.—The essential characteristic of banks of the class which we may call industrial banks, since their lending is principally for the promotion of industry rather than of commerce, is that such banks ordinarily lend for long terms rather than for short terms. Briefly to distinguish between the several classes of such banks, the investment bank is actively engaged in the promotion of industrial and other enterprises; the trust company is a lender, as distinguished from a promoter; the savings bank is an investor as distinguished from both the foregoing, in the sense that all elements of speculation are eliminated so far as possible,

¹ The term "industrial bank" is frequently used as a title by commercial banks which make a specialty of handling the small accounts of working people. In the sense in which the term is used in our classification, however, it refers to "industry" as distinguished from "commerce."

safety being the first concern; while the rural-credit bank is especially designed to promote industry of an agricultural nature.

Investment banks.—"Investment bank" is a specific term used to designate the private bank which deals primarily in long-term securities connected with the promotion of enterprises. Not infrequently the banking house itself will initiate the organization of a new business or the reorganization of an old, and supervise the marketing of its securities, underwriting them and marketing them among the buyers who compose its clientele. Emphasis is laid upon the fact that the investment bank is not a merely passive investor; it seeks not only interest on its investments but a profit or a commission upon the resale of the securities it handles. The house of J. P. Morgan and Company is an example of this type of bank. Almost any legitimate big-scale proposition will interest such a house as this.

The funds which constitute the working capital of such a banking firm are usually investment funds already in existence, as distinguished from the deposit funds created by commercial banks out of the crude resources of the borrower. Such a bank has practically unlimited funds at its command, owned in part by the partners of the firm and in part by the clients of the bank, who are ready to lend their money or credit upon the simple recommendation of the house. The borrowing power, and consequently the lending power of such a combination, together with its banking connections, is practically without limit. Any feasible undertaking whatever can be handled; the larger it is the better they like it. The formation of the

United States Steel Corporation, for example, is one of the Morgan exploits.

It is unfortunate, perhaps, that there are no such investment banking services available for lesser businesses. In the nature of things, however, men of the calibre of the big investment bankers cannot devote their attention to small enterprises, and it is the attention given by competent financiers that makes for success—the exercise of competent judgment. The credit facilities without the personal attention of competent men would be of minor value, even if they did not lead to misdirection of effort and misemployment of capital.¹

Trust companies.—The trust company type of bank approaches rather closely to that of the true bank. It deals largely in what we have called “primary credit” (see p. 587), creating new loans and issuing deposits. In some cases, however, these are time deposits, without the “checking account” privilege. Such deposits are usually based on previously accumulated funds, deposited for safekeeping at a very conservative rate of interest. Such new loans as are created are likely to be withdrawn from deposit immediately for permanent investment in the borrower’s business or for whatever other purpose he may have for the funds, since the borrower must pay a higher rate of interest on his loan than the bank will pay on a time deposit. The time deposit can be “loaned,” with a very small proportion retained as a reserve against demand.

Trust companies supply a large part of the long-term

¹ Investment banks generally conduct a regular banking business besides dealing in securities. Some of them have deposits subject to check that run into the millions.

credit employed in business for the purchase of fixed assets and as permanent working capital. They also supply much of the special working capital, as in the financing of operations which require extra capital for a longer period than that of the usual commercial short-term loan. The trust company is also a source of financial assistance in agricultural operations, lending money on farm lands for the purpose, preferably, of improvements.

Many trust companies have added commercial banking departments to their other facilities. In the East, the banking department of a trust company is often its most conspicuous feature, a trust company being regarded as a State bank with trust company powers or privileges. The term "State bank and trust company" is frequently used as a title by a State bank with trust company privileges, while, especially in the West, the "trust company" or "loan and trust company" may confine its activities to accepting time deposits, making loans on real estate, and lending on or dealing in long-term securities.

The original function of the trust company, which tends to become subordinated, is the management of estates or funds in a fiduciary capacity. Following this first activity, the trust companies branched out into engaging in business for themselves as well as for the benefit of those for whom they acted as trustees, administrators, guardians and executors. Making loans, financing new enterprises and dealing in securities generally become part of their regular business. One of the most recent developments is the commercial banking department, noted above. As well as the tendency for the trust com-

pany to assume banking functions, we may note the tendency of State banks to add trust company functions to their commercial banking functions. A very important function—not a banking function, however—is the supervising of organizations and reorganizations, furnishing competent services in assuring the formal correctness of issues of securities, and perhaps themselves underwriting the issues.¹

Savings banks.—From the standpoint of the depositor, savings banks are what their name implies—banks in which savings are accumulated. In some cases, the depositors may have a checking privilege. This feature is found only in stock savings banks, however, and there only rarely. Ordinarily, however, money may not be withdrawn except at the end of interest periods under penalty of forfeiture of all or a part of the accrued interest. From the standpoint of business, however, the savings bank is of interest chiefly as a source of investment funds, accepting only the most conservative securities. Legal provisions of the various States define the classes of securities in which savings funds may be invested. The importance of savings banks as sources of investment funds may be seen in the immensity of their deposits, which run into the billions.

Savings banks in the United States, exclusive of the Postal Savings Bank, are of two important classes, mutual and stock. Mutual savings banks are not organized

¹ As registrars of stock they prevent the issue of spurious stock by careless or defaulting corporate officers; as transfer agents they do the clerical work connected with the transfer of ownership of stocks and bonds; as depositaries, they accept stock and bonds under reorganization and other agreements.

for profit as banks, but for the benefit of their depositors, being managed by trustees who receive salaries, the profits being returned to the depositors in the form of interest on their deposits.

Stock savings banks, however, are managed for profit; interest is paid on deposits, and profits are paid as dividends to the stockholders. The stock savings bank, naturally, is more aggressive than is the mutual savings bank, and is fundamentally sounder, having the liability of the stockholders as a partial guaranty against loss. The mutual savings bank, on the other hand, must depend altogether upon the intelligence and good faith of its trustees and upon the protection afforded by legislation restricting investments to the most approved types of securities.

Rural-credit banks.—Under the Federal Farm Loan Act of July 17, 1916, provision is made for the extending of long-term credit for agricultural purposes. Two systems of banks were established or authorized—Federal land banks and joint-stock land banks.

The Federal land banks established under the act referred to are twelve in number, one in each of the twelve districts into which the country for this purpose is divided. Each bank may have branches within the district. The capital stock of each bank is not less than \$750,000, subscribed at first by the public in general, with provision for subscriptions by the Government to such a portion of the stock as might not have been subscribed by the public within thirty days after the stock was offered for sale. The ultimate ownership of the stock of the land banks, however, is intended to be in "national farm loan

associations," organized by persons desiring to borrow money on farm mortgage security under the terms of the Act. Such a borrowers' association must consist of "ten or more natural persons who are the owners, or about to become the owners, of farm land qualified as security for a mortgage loan under section twelve of this Act." The aggregate amount to be borrowed must be not less than \$20,000, which, on compliance by the association with the terms of the Act, it may receive from the Federal land bank and apportion among its individual members. The maximum loan which may be made to any one member is \$10,000. The association must subscribe to an amount of stock equal to five per cent of the amount borrowed, to be held by the bank as security and to be retired upon repayment of the loan. Stock so issued to these associations is designed to supersede the stock originally subscribed by the general public and the Government.

Loans are made at a rate of interest not to exceed six per cent, and for a period of not less than five nor more than forty years, the loan being amortized by serial payments.

The provisions as to purposes for which money may be borrowed under the Federal Farm Loan Act are:

(a) To provide for the purchase of land for agricultural uses.

(b) To provide for the purchase of equipment, fertilizers and live stock necessary for the proper and reasonable operation of the mortgaged farm. The term "equipment" is to be defined by the Federal Farm Loan Board.

(c) To liquidate indebtedness of the owner of the land mortgaged, existing at the time of the organization of the first national farm loan association established in or for the county in which the land mortgaged is situated, or indebtedness subsequently incurred for purposes mentioned in this section.

No such loan may exceed fifty per cent of the value of the land mortgaged and twenty per cent of the value of the permanent insured improvements upon the land, the value to be ascertained by appraisal, as provided in the Act.

In addition to the Federal land banks, the Federal Farm Loan Act gives authority for the organization of joint-stock land banks, under the supervision of the Board, but independent of Government financial assistance and somewhat less restricted as to their operations.

A joint-stock land bank, properly incorporated, may be formed by any number of natural persons not less than ten. The capital stock required to be subscribed is a minimum of \$250,000, one-half paid in and the balance subject to call by the board of directors. No such bank may issue or obligate itself for outstanding farm loan bonds in excess of fifteen times the amount of its capital and surplus, and may not receive deposits or transact any banking business not expressly authorized by the Act, nor may it issue any bonds until its capital stock is fully paid in.

COMMERCIAL BANKS

The purpose of commercial banks.—Commercial banks, as distinguished from what we have called “in-

dustrial" banks, have as their most conspicuous activity the supplying of short-term credit. Their facilities for the transfer of convertible credit from one holder to another—in other words, the facilities afforded by their system of deposits and checking accounts—are open to all alike—manufacturers, merchants, or professional men, regardless of the purposes for which the funds are to be used. In general, anyone with money may deposit it in a commercial bank and check against it as he pleases, although the larger banks will not accept accounts which do not involve the keeping of a fairly large average amount on deposit and while, moreover, all banks prefer to accept deposits only from reputable persons. So far as deposits and checking privileges, as such, are concerned, however, no discrimination is made with respect to the purpose for which the funds are used.

Again, with respect to loans made by commercial banks, the first consideration is that they shall be based on liquid assets—assets that are readily convertible into "cash" at any time, or that in all probability will be converted into cash within thirty, sixty or ninety days.

It cannot be said that the bank is interested in the purpose for which the proceeds of the loan are to be used, provided it is assured of payment within the time agreed upon. A manufacturer or any other business man is as much in need of short-term credit for certain legitimate purposes as is the merchant. A bank will lend, on proper security, as readily to a manufacturer as to a merchant. Even if, as is not the case, the bank would lend its credit only for the promotion of transactions facilitating the movement of goods towards the consumer, there can be

no fundamental distinction made between conversion of raw materials into a salable product and the movement of such a product from the point of production to the market. If one is a legitimate purpose for which to lend money, so is the other, for each represents a necessary stage in the process of production. If production were halted at one stage it would be checked at every stage. The essential distinction is between long-term, or inconvertible, and short-term, or convertible, loans—not between the purposes of the loans. The commercial bank has adapted its mechanism for handling, as its regular business, only short-term or convertible loans. Having undertaken the task of supplying short-term credit, its first duty is to take care of the legitimate demands which may be made upon it for short-term credit. When the legitimate demand is taken care of, the bank may employ the balance of its credit as it pleases, keeping its loans, however, as “liquid,” or convertible, as possible.

Thus we find the private commercial bank, which is less restricted by law in regard to its investments than are incorporated banks, making long-term loans when it has idle funds, or even buying and selling long-term securities for profit—that is, for the sake of a difference between the purchase price and the selling price, as well as for the interest or dividends which may be receivable.

So also, when the merchant or the manufacturer goes to the bank for a loan, which is granted by the bank ostensibly as a commercial loan, for the furthering of some specific commercial transaction, the bank does not restrict its scrutiny to the transaction itself as a source of repayment, but looks as well to the borrower's financial

statement, particularly with respect to the ratio of quick assets to current liabilities. If the borrower has a large surplus of quick assets over current liabilities he will easily get his loan and then may take his money and invest it in fixed assets; the bank does not know nor care, so long as the loan is paid at maturity. In short, the borrower has a legitimate need for long-term as well as for short-term credit; he borrows both kinds of credit, but applies the funds at his own discretion, arranging his business in such a manner that his loans, whether long-term or short-term, will be paid when they become due.¹

It would seem, then, that the purpose of the commercial bank cannot be said to be strictly to supply money for commercial transactions, nor strictly to make short-term loans, but rather to deal in readily convertible credit, which may be long-term or short-term, but which can be converted into money upon short notice.

Loans and discounts.—Any purchase of a debt constitutes in effect a loan to the debtor. Whether loans are called loans, discounts, or purchases, the distinctions between them are chiefly technical. A discount, as distinguished from other loans, is the purchase of credit with interest charges paid in advance. The bank “discounts” its depositor’s paper, and “purchases” the paper of outsiders.

Classes of loans.—Loans made by commercial banks are made either as direct loans or as purchases of securi-

¹ “We may safely conclude that 50 per cent of all loans of national and state banks and trust companies is devoted to investment uses and that, including direct investments, about two-thirds of all the credit extended by commercial banks goes for fixed rather than for working capital.”—H. G. Moulton, *Journal of Political Economy*, June, 1918.

ties. Obviously, the purchase of a security is merely a loan.

Direct loans may be classed as either demand loans or time loans, and as secured or unsecured.

"Purchase-loans" may be broadly divided into purchases of acceptances and purchases of securities—stocks, bonds and also promissory notes. The purchaser of shares of stock, of course, becomes a part owner of the issuing corporation, but a sale of stock is, in effect, a form of borrowing, especially if the stock is "preferred" stock—that is, stock upon which a stipulated dividend is to be paid, if earned. Commercial banks normally hold securities, not inclusive of Government bonds, in an amount equal to about one-fifth of their loans and discounts.

Demand loans.—Demand, or call, loans are loans payable upon the demand of the lender; or at any prior time, at the option of the borrower. They are made, usually, upon collateral security of a readily convertible type—often to brokers, who secure their working capital by means of this class of loans, on stocks and bonds as security.¹

The rate of interest fluctuates much more widely on "call money" than upon time loans. The reasons for this are obvious—that when money is plentiful a temporary surplus can be loaned by the bank "on call;" and lending even at a low rate of interest is preferable to letting the funds remain idle. Again, when money is scarce, a

¹ Technically a "call loan" is one that (1) is on demand, (2) is secured by negotiable collateral, (3) that is for \$5,000 or more, and (4) that is made by a bank or banker. Such loans, under the law of New York, where they are most frequently made, may bear any rate of interest without becoming usurious.

broker or other borrower who may find it vital to secure cash for temporary use will be willing to pay almost any price for a loan to tide him over his crisis.

Call loans have been an important feature of our financial system, in their influence upon movements of money from the country banks to the financial centers, particularly to New York. The fact that a market for idle funds could be found in New York, for loans to brokers on the stock exchange, along with the necessity of keeping funds with New York banks to meet their demands for New York exchange, led banks all over the country, so far as they were permitted by law, to keep a large part of their reserves with New York banks; for there they could obtain a low rate of interest upon their deposits, whereas in their own vaults the reserves would be idle. The New York banks, in turn, made it a practice to lend these bankers' deposits as demand loans, obtaining a higher rate of interest than they paid the country banks. Such loans, of course, had to be in such a shape as would make it possible for the New York banks to "call" them and return the funds to the country banks on demand.

It is easy, then, to see how a financial disturbance might originate in New York and affect the whole country. If the New York banks had the country banks' funds lent to brokers who failed—numbers at once—they would have difficulty in meeting the demands for the return of the country balances. The peril inherent in such a situation may be seen when it is realized that an amount equal to approximately 70 per cent of the reserves in the New York and Chicago banks, it is estimated, has been lent to

brokers in the form of call loans, with stocks and bonds as security. These conditions have been modified by the operation of the Federal Reserve System, which, in fact, was brought into existence largely with a view to correcting the maladjustments resulting from such a concentration of reserves in the larger cities.

It will be observed that the making of call loans is orthodox commercial banking practice, yet with respect to the use made of the funds in such cases as were mentioned above, there seems to be little to indicate that the practices referred to were primarily of the nature of mercantile financing. Even if we grant that the broker's business is, from his point of view, a commercial one—the dealing in securities as commodities—the funds, except in so far as they contributed to the broker's profit, were devoted largely to speculative, not commercial, purposes.

Time loans.—Time loans, of a maturity period of from one to three months, are the typical short-term credit extended by the commercial bank. In these we see the funds which enable the merchant to maintain the continuity of his operations. He purchases goods with the credit he has received from the bank in exchange for his own credit, and replenishes his supply of credit constantly in advance of the sale of his merchandise by “depositing” the proceeds of his sales—whether such proceeds are in the form of cash, or of credit instruments secured from his customers. Even where no money or credit instrument is received upon the making of a sale, the credit being in the form of a book account, the transfer of the customer's credit is implied, and the bank is

willing to consider the merchant's possession of the book account an asset upon which credit may be extended, although it is only rarely that the actual title to the book credit is transferred by the merchant to the bank.

Time loans without collateral may be made to the depositor upon his own note (single-name paper), or upon a note secured from the customer and indorsed by the merchant (double-name paper), or upon the merchant's note indorsed for strengthening by a friend of the merchant (accommodation paper).

Time loans are made without collateral (pledge of securities) when the borrower's financial statement indicates that he has such a ratio of quick assets to current liabilities that he will be able to pay his note without difficulty. Again, the reason for lack of collateral may be that the borrower; a merchant, for example, has no suitable collateral, his capital being in the form of a stock of goods. Such loans are made only to borrowers whose "moral" or "character" rating is high.

Time loans secured by collateral are made when there is a lack of certainty as to the borrower's ability to pay—perhaps because the funds may be intended for the purchase of fixed capital. If willingness to pay is in question, the loan will seldom be made at all. If not for fixed capital, the funds may be for purposes of speculation, or for purchase of goods for consumption, not for resale. The typical collateral is stocks and bonds. Typical borrowers for speculative purposes are financial houses and others underwriting or marketing securities.

Acceptances.—Especially since the establishment of the Federal Reserve Banks, which may issue notes against

1000

1000

\$ 100,000 ⁰⁰/₁₀₀NEW YORK, November 23, 18

thirty (30) days after date _____ for value received
 We _____ promise to pay to LADENBURG, THALMANN & CO., or order, at their office,
 No. 66 Broad Street, in the City of New York, _____ dollars,
One hundred thousand _____
 in United States Gold Coin, with interest at the rate of _____ per cent. per ann., having deposited
 and pledged with them as collateral security for payment of this or any other indebtedness or liability
 contracted or to be contracted, due or to become due to them.

500 Union Pacific R.R. Com. @ 130

500 U.S. Steel Corp. Com. @ 100

200 Utah Copper Co. @ 85

of the present market value of \$ 132,000 ⁰⁰/₁₀₀ I also hereby giving to them a lien for the
 amount of all the said liabilities upon all the property or securities at any time deposited with or
 left in their possession or custody by or for _____ for safe keeping or otherwise or in which I have any
 interest and also upon any credit balance or deposit account however arising, which I from time to
 time may have with them.

It is agreed that I may from time to time exchange any security held by them in whole or
 in part for another or others, satisfactory to them, and that they may, in their discretion, require the
 exchange of, or a substitution for, all or any part of the same, and that they may from time to time
 demand further security to an amount they may deem sufficient; and any security exchanged or
 substituted shall in all respects be subject to all and singular the agreements and provisions herein
 contained.

I do hereby authorize and empower them at their option at any time to appropriate and
 apply to the payment and extinguishment of any of the above named obligations and liabilities,
 whether now existing or hereafter contracted, any and all moneys now or hereafter in their hands
 on deposit or otherwise to the credit of or belonging to _____ whether the said obligations or liabilities
 are then due or not due; and I further agree that in the event of _____ insolvency, all or any of the
 said obligations and liabilities shall at their option become and be immediately due and payable
 without demand of payment thereof.

It is further agreed on failure to comply with any of the provisions herein contained, that
 they may declare this obligation due, and whether due or otherwise, may sell the whole or any part
 of the said securities, including any exchanges, substitutions or additions, at the New York Stock
 Exchange, or at any Broker's Board, or at public or private sale, without notice of sale, or of time or
 place of sale, without demand of payment and without advertisement, unless they shall elect to give
 such notice or notices, or to demand payment or to advertise, which or any of which they may do or omit
 at their election; and upon any such sale they may bid for or become purchasers of the whole, or
 any part of the property sold, and the proceeds of any such sale, less the proper costs and expenses
 thereof, shall be applied first to the discharge of this obligation, in United States Gold Coin, and
 next to the payment of any one or more of any other of said liabilities or indebtedness of _____ to
 them whether then due or not, as they shall deem proper or they may hold the same at their
 option as additional security against any liability or indebtedness not then matured. If there be any
 deficiency I promise to pay the same, if any surplus, the amount to be paid over to _____ subject to the
 above provision as to any other liability or indebtedness.

A.B.C.

COLLATERAL TRUST NOTE

approved commercial paper, the trade acceptance and the bankers' acceptance have come into great prominence. The trade acceptance is a draft which the purchaser of goods "accepts," or agrees to pay. The bankers' acceptance is a draft which a bank has accepted. An explanation of acceptances and of the issue of currency against them will be found in the brief description of the Federal Reserve system, in the next chapter, while an explanation of the use of acceptances in commercial transactions will be found in the chapter on "Credit."

The "line of credit."—Banks give a depositor, as a rule, a line of credit amounting to five times his average balance on deposit. The theory, as usually understood, is that by his depositing, say, \$1,000, the bank is enabled to make loans to the extent of \$5,000, the depositor, other things being equal, being given the preference. The actual situation, however, is that the bank, in typical cases, upon receiving the borrower's credit and money and converting it into its own credit, lends the depositor an amount of its own credit equal to the total it has received—\$5,000, in our present illustration—but requires that the depositor use not more than four-fifths of it, leaving one-fifth which the bank may use as a reserve against cash demands—upon which the bank, however, receives interest. The borrower from a commercial bank pays a rate of interest 20 per cent higher than that of the same nominal rate paid to the industrial bank or trust company, since the latter holds much of its funds as time deposits, against which a one per cent reserve is sufficient to take care of cash demands. The extra rate of interest paid to the commercial bank is, however, com-

compensated for by the value of the convenient checking system, but the account will not be larger than the borrower requires as a reserve against his check payments; he will secure his larger funds, if need be, from an investment bank or trust company, or through a note broker, in which circumstances he can use the whole amount of the funds derived from the sale of his credit.

What is a bankable proposition?—The question is frequently asked, just what is a bankable proposition? The following rules may be laid down. It is not presumed to dictate that a bank should not grant a loan unless all these elements are present, but they should be present if the relations between the bank and its customer are to be enduring and mutually profitable.

1. The loan should be for the purpose of initiating a transaction which will be consummated in the ordinary course of business within a reasonably short time, the maximum a year.

2. The borrower should be in a position to liquidate the loan even if the specific transaction should miscarry.

3. To this end the borrower should have liquid assets (exclusive of the money to be borrowed) in excess of all liquid liabilities (including the amount of the loan), with a comfortable margin over. Leaving the loan out of the reckoning, the general rule is that liquid assets should be double the amount of liquid liabilities. This rule, however, is too rigid to be of any practical value.

4. The borrower should be in a position to show that he is conducting a profitable business, supplying legitimate public demands. It is not implied that the business must be that of supplying necessities only, though the closer

to basic needs a business gets, the more stable is it likely to be.

5. The borrower should be ready, willing and able to show that he has good moral character, and that he is reasonably intelligent in business affairs—that he possesses native shrewdness and good judgment and that he has a fair understanding of business methods and business principles.

6. The borrower should be ready to show that he has sufficiently protected his business with insurance.

7. The borrower should be ready to show that he is subject to no excessive contingent liabilities or hazards such as might be created by his accommodation endorsement of outside paper or by his being involved in speculative engagements.

If a business man can show these elements he has a right to banking accommodation, and should not rest content till he gets it, uses it and satisfies the obligation it creates.

The clearing house.—Before entering upon our subsequent brief examination of the several classes of commercial banks, we may at this point describe the method by which banks adjust among themselves the accounts created when they “cash” for each other the checks of depositors. This adjustment of accounts is accomplished through the “clearing house.”

A clearing house association is an association of banks, for the purpose of maintaining a clearing house, where accounts of one bank against the other may be adjusted. The principal adjustments are of depositors' checks; when these are sent to the clearing house they are credited to

the collecting bank and debited to the paying bank, the totals added up, and settlements of differences made in clearing house certificates, U. S. gold certificates, legal tender notes, or gold coin. The use of the clearing house certificates is in the transfer of credits to funds which may be kept at the clearing house in gold coin, each member keeping a balance on deposit. Checks credited to and charged against each bank will nearly balance each other, and collections are accomplished, accordingly, principally by bookkeeping.

If, for example, there were only two banks, A and B, in the clearing association, it can readily be seen how A might hold \$1,000 in checks drawn against B, while B might hold \$1,000 in checks drawn against A. Simply by exchanging checks, settlement would be made. If B, however, held checks to the amount of \$1,100, A would be required to transfer to B \$100 in cash. The principle, of course, remains the same, no matter how many banks compose the association—cross accounts being settled not by cancelling individual accounts against each other, however, but by cancellation of totals as between each bank and the clearing house.

The distinction between clearings and collections, it may be explained, is that the term "clearing" is reserved for collections made by offsetting checks drawn on different banks, one against the other. Where there is no clearing house, checks must be collected by being sent to the debtor bank, which then remits the proceeds.

Private commercial banks.—The classes of commercial banks of which we may now give a brief description are: private banks, State banks and national banks.

Private banks are conducted by individuals or partnerships, and are usually allowed a considerable latitude in their operations, although they are generally under State supervision or regulation. Private banks of the commercial type are found, as a rule, only in the smaller communities, which are not strong enough to support a state or national bank—since the state or national bank must have a minimum capital prescribed by statute, ranging from \$25,000 in the case of any national bank down to amounts rarely as low as \$5,000 in the case of State banks. Even in the larger towns, however, private banks are to be found that have been established in earlier days and still maintain themselves in competition with the newer incorporated institutions. The prestige resulting from many years of successful operation goes far toward offsetting the greater inherent advantages in security possessed by State and national banks. It seems probable, however, that with the passing of the present established private commercial banks the class will almost if not entirely disappear. In the larger cities, as noted above, the private bankers, except the larger ones, rarely attempt to do a commercial business, but deal in stocks, bonds and investments generally, as well as in foreign loans and exchange. It will be recalled how certain private bankers, for example, negotiated immense loans to foreign governments, prior to the entrance of the United States into the European War and the consequent assumption of the burden of war financing by the Government itself.

State banks.—State banks are banks incorporated under the laws of States, as distinguished from national

banks, which operate under Federal charters, and from private banks, which are unincorporated.

State banks, as a rule, may be organized under fewer restrictions than national banks, and with less capital. They are permitted a wider range of activities and, consequently, have maintained a position of first importance with respect to their numbers and are but little behind the national banks with respect to the volume of business done. About one-half the banking power of the country is held by State banks, and their number is three times that of the national banks. In a number of the Western States, laws have been enacted providing for the guaranty or insurance of demand deposits of State banks, each bank contributing, pro rata, to a fund maintained for the protection of the solvency of any member institution, with respect to its demand deposits. Since national banks are not, as a rule, eligible to participation in such a plan, quite an impetus has been given to the increase of State banks at the expense of national banks.

In view of the need for mobilization of the banking resources of the country, several "drives" have been made with the object of inducing State banks to come into the Federal Reserve system, but until recently no appreciable number had joined, and even yet by far the greater number remain outside.

It is not to be doubted that the State banks recognize the value of membership in the Federal Reserve system, especially in view of the growing use of acceptances, which can be handled to better advantage by member than by non-member banks, but it would seem that each bank has its individual reasons for neglecting or deferring the

entering of the new system. Among these reasons may be mentioned: inability to comply with the increased capital requirements; aversion to the restrictions upon the amounts which member banks may lend to individuals, and to the restrictions upon the security upon which loans may be made; increased cost of operation; and reluctance to accept the strict Federal supervision imposed upon member banks. Moreover, many of the advantages of the system may be had without formal membership, especially with respect to clearing and collection facilities. Despite the hesitation, however, which State banks have evinced in regard to joining the system, it is confidently assumed that sooner or later the entire commercial banking business of the country will be unified under the Federal Reserve system as it develops.

National banks.—The national banking system of the United States was established by the passage of the National Bank Act in 1863, radically amended in the following year. The purpose of the Act was to provide a market for Government bonds and a satisfactory currency. The banks were to purchase bonds and issue notes against them as security. It was expected that the State banks would join the new system, but so few of them did so voluntarily that in 1865 a tax of 10 per cent was imposed on notes issued by State banks. Since the issue of notes was at that time a profitable part of a bank's business, large numbers of State banks were by this means forced to incorporate under Federal charters.

Under the National Bank Act, a national bank is permitted to receive deposits; to discount promissory notes, drafts, bills of exchange, and other evidences of debt, to

buy and sell exchange, coin and bullion, to lend on personal security; and to exercise other functions incident and necessary to the carrying on of a banking business.

The limitations and restrictions upon national banks, with respect to their capital and the nature and extent of the loans which they are permitted to make, have operated to prevent them from monopolizing the banking field, as noted above, but these restrictions have at the same time been influences making for safety and conservatism. The banks which have preferred to operate under State charters or as private concerns have been compelled, by the competition of the national banks, to offer their depositors at least an approximately equal degree of safety.

The capital requirements for the organization of national banks are: a minimum of \$25,000, in any case; in towns of 3,000 to 6,000 inhabitants, at least \$50,000; in towns of a population of more than 6,000 and less than 50,000, \$100,000; in cities of over 50,000, \$200,000. One-half of the capital must be paid in, and the balance at the rate of not less than 10 per cent a month. There is no maximum limit.

The capital of a national bank may not be or remain impaired for a period of more than three months, under penalty of being closed by the Comptroller of the Currency. Liabilities may not be contracted in excess of its capital, except for circulating notes, deposits, drafts on its own funds, and unpaid dividends. Not more than 10 per cent of its capital and surplus may be lent to one person, firm or corporation. Only such real estate may be permanently owned as is necessary in its own business as a bank; real estate acquired by foreclosure and similar

means must be disposed of within five years. National banks may now, under certain restrictions, make loans upon real estate security, the amount so lent not to exceed 50 per cent of the actual value of the property; not to exceed 25 per cent of the bank's capital and surplus, or 33 1-3 per cent of its time deposits. Such loans may run for a maximum period of five years on farm land, and one year on other real estate. The making of such loans is confined to banks outside of central reserve cities and to property situated within 100 miles of the bank.

The most notable recent developments affecting national banks are those of the Federal Reserve system, established in 1913, especially the provisions of the new system relating to rediscount of commercial paper. A brief description of the important features of the Federal Reserve system is given in the following chapter.

CHAPTER XXVII

BANKING

(*Continued*)

THE FEDERAL RESERVE SYSTEM

Bankers' banks.—The Federal Reserve system is primarily a system of bankers' banks, formed for the purpose of supplying credit to commercial banks, which credit is distributed by the commercial banks to their depositors. The raw materials of credit are, in the first instance, supplied by the depositors, but as between the commercial banks and the bankers' banks, commercial bank credit is a raw material to be sold to the superior banks and by them resold in exchangeable form to the commercial banks. The Federal Reserve banks deal only with the Government, and with other banks, except that they may buy commercial paper on the open market.

Origin of the Federal Reserve system.—The Federal Reserve System was established by the Federal Reserve Act, signed by President Wilson on December 23, 1913.

Two plans had been considered—that of a single central bank, and that of a number of regional banks of equal rank. The latter plan was adopted, for two principal reasons: (1) to avoid the sectional jealousy and resentment which would have been felt toward the favored district in which one central bank might have been established; and (2) to avert the question of too intimate a

governmental control, which would in the greatest probability have been raised, if one bank only had been placed at the head of the system. An additional purpose may have been to destroy the centralization of banking power in the hands of bankers themselves, which had led to apparent evils under the former system. The new system provides, of course, for a centralized, but impartial control, exercised by the Federal Reserve Board.¹

Twelve "Federal Reserve" banks, co-ordinate in rank, accordingly were established, each with an authorized minimum capital of \$4,000,000. Provision was made for initial subscriptions to the stock by the Government and by the public, this stock to be redeemed and cancelled when the "member banks" should have subscribed the required amount. All national banks were compelled to become members, under penalty of forfeiture of their charters. Other banks may become members by complying with the requirements.

The twelve reserve banks are operated under the management of local officers and boards of directors, but are all subject to the authority of the Federal Reserve Board. Each has its own geographical "reserve district," the twelve districts together comprising the continental United States, exclusive of Alaska. Branches are authorized and have been established, both within the districts and in foreign countries, particularly in the Latin-American countries.

¹ The Federal Reserve Board consists of seven members—two being the Secretary of the Treasury and the Comptroller of the Currency, and five being selected by the President of the United States, with "due regard to a fair representation of the different commercial, geographical and industrial divisions of the country." The Senate assists the President in the selection of these five members, and confirms their appointment.

Disposition of earnings.—The earnings of the reserve banks are disposed as follows: a 6 per cent annual cumulative preferred dividend is paid on the shares of stock (par value \$100), which stock is held by member banks; the remainder of the earnings is paid to the United States as a franchise tax, except that one-half of the earnings of each reserve bank in excess of the preferred dividends, which are a first claim upon its earnings, are devoted to the creation and maintenance of a surplus fund equal to 40 per cent of its paid-in capital stock. The earnings received by the United States as a "franchise tax" may be used, at the discretion of the Secretary of the Treasury, to supplement the gold reserve against outstanding notes or to reduce the outstanding bonded indebtedness of the United States.

Objects of the Federal Reserve System.—A new system of banking was made imperative by the defects which were inherent in the old system. It was apparent that the new system to be established would provide, if it were to be satisfactory, (1) mobility of reserves; (2) adjustability or "elasticity" of currency.¹

By mobility of reserves is meant the possibility of shifting reserves of money to the points where demands for money might be most insistent. It is scarcely necessary to point out the fact that the lack of mobility of

¹ The terms "elasticity" and "flexibility" have been used to denote the quality desired in the supply of credit. "Adjustability" expresses more accurately the meaning intended, for "elasticity" suggests expansion and subsequent contraction of a given amount of credit, while "flexibility" suggests a change of position. The idea of change of position is included in the term "mobility." What is actually meant is an increase or decrease in the supply of manufactured or exchangeable credit, not having any normal or fixed quantity as a base, but determined solely by the current needs of business.

reserves was a conspicuous feature of the obsolete system. As a rule, the greater became the demand for money, the less the amount of money which was to be had, even for sound and legitimate enterprises.

By adjustability of the currency supply, is meant the possibility of adjusting the amount of "money" in circulation to the amount required for the legitimate needs of business. This is accomplished through the creating of credit currency to supplement gold or legal tender. Federal Reserve notes; bank notes, and deposits subject to check are typical forms of credit currency.

In brief, the adjustment of the supply of exchangeable credit—which term implies convertible credit—is accomplished by the issue of Federal Reserve notes in exchange for commercial paper conforming to the specific requirements of "eligibility" applying to such paper. In order to assure the exchangeability of these Federal Reserve notes, they are made convertible—that is, redeemable in gold on demand at the United States Treasury Department, or in gold or lawful money at any Federal Reserve bank.

Federal Reserve notes, like other substitutes for money, are in reality no more than evidences of credit, or purchasing power, which has been formally pledged—the possession of the note entitling the holder to exercise the purchasing power inherent in the capital assets which have been pledged.

To assure the convertibility of the notes, each note bears on its face the authority for its conversion, and the promise of the United States that a demand for conversion will be honored. To make certain the redemption

of this promise, a reserve in gold is carried at the Treasury Department at Washington, sufficient to meet any demands for conversion that may ordinarily be made.

Theoretically, the adjustability of the Reserve note supply is limited by the fact that the notes are not only redeemable in gold but also issuable against gold as well as against short-term paper. The ultimate supply of notes is, evidently, limited by the amount of gold which can be secured as a reserve, and not by the legitimate needs of business only. This defect, however, is probably more theoretical than practical, as the supply of gold, apparently, is ample.

The "member banks."—All national banks are members of the Reserve system, each member bank subscribing to stock of the Reserve bank of its district to the amount of six per cent of its own capital and surplus. Other banks may become members by compliance with the rules laid down as to capitalization, lending, and other matters which are obligatory upon national banks. To become a member, accordingly, a State-controlled bank does not need to change its form of organization, but merely subscribes to the required amount of stock of the Reserve bank and subjects itself to the authority of the Federal Reserve Board. The regulations of the Board, however, as to the loans which may be made to individuals—with respect to the amounts of such loans as well as the security which may be accepted as collateral, have operated to prevent a general acceptance of the system by the State and other outside banks. In any case, the State banks profit by the operation of the system, both as a result of the improved financial conditions prevailing and,

specifically, with respect to their use of the facilities provided by the system for clearings and collections.

Operation of the Federal Reserve system.—The operation of the Federal Reserve system could not be described with any degree of adequacy within our limited space. We cannot, however, omit a very brief outline of the following vital features of the system:

1. Reserves against deposits
 - (a) Reserves of reserve banks
 - (b) Reserves of member banks
2. Federal Reserve notes
 - (a) Rediscount of approved commercial paper
 - (b) Issue of notes
 - (c) Reserves for protection of notes

Reserves of reserve banks held against deposits.—Each of the twelve reserve banks may receive deposits, subject to certain provisions, restrictions, and limitations, from the Government of the United States, from member banks, from non-member banks, and from other reserve banks. Against these deposits the reserve bank must hold a reserve of 35 per cent in gold or lawful money.

Reserves may be strengthened (1) by additional deposits (of which 35 per cent serves as a reserve against the new deposit and 65 per cent as an increase of reserves against other deposits), and (2) by increase of cash resources due to reduction of loans and discounts or investments in securities.

Since the reserve banks may be the repositories of all Treasury funds except the required reserves which the Treasury must maintain against its own obligations, in-

cluding the gold-redemption fund, the Secretary of the Treasury, who controls the disposition of Treasury funds, may strengthen the reserves of any reserve bank simply by depositing Treasury funds therein or by checking into them funds out of a reserve bank which has a superfluity of reserves. Any reserve bank, moreover, may come to the aid of any other reserve bank, by rediscounting its discounted paper—in fact, may be required to do so, by the affirmative vote of five members of the Federal Reserve Board. The rates for such rediscounting are fixed by the Board. By these means mobility of reserves is assured.

Cash resources may be increased also (1) by sale of "earning assets," and (2) by raising the rates of interest and discount, thus reducing the demand for loans and so increasing the ratio of cash resources to loans and discounts.

Reserves of member banks.—Each member bank must establish and maintain with the Federal Reserve bank of its district reserves as follows: (a) If not in a reserve or central reserve city, 7 per cent of the aggregate amount of its demand deposits (deposits payable within 30 days) and 3 per cent of its time deposits. (b) If in a reserve city, 10 per cent of its demand deposits and 3 per cent of its time deposits. (c) If in a central reserve city, 13 per cent of its demand deposits and 3 per cent of its time deposits.¹

¹ Under the National Banking Act, New York, Chicago and St. Louis were designated as "central reserve cities"; certain other cities were designated as "reserve cities," while banks in places not included as "central reserve" or "reserve" cities were designated as "country banks." The term "reserve city" is not to be confused with "Federal Reserve city," which means, a city where a Federal Reserve bank is established.

Member banks may increase their reserves by rediscounting "eligible" paper at the reserve banks of their respective districts or by raising their rates of interest and discount, which lessens the demand for loans, so that as existing loans are repaid, the cash received tends to remain in the bank instead of being put out again in the form of new loans.

It may be remarked that, so far as the reserves of the member banks are concerned, the possibility of increase of their cash resources through the rediscount of approved commercial paper—that is, paper conforming to the rediscounting requirements—at the reserve banks is practically unlimited.

Federal Reserve notes.—The Federal Reserve notes issued by reserve banks are, apparently, destined completely to supplant bank notes, including Federal Reserve bank notes,¹ as a substitute for money, and possibly, at some time in the future, also the United States notes, or

¹ Federal Reserve bank notes are notes issued by reserve banks against their holdings of U. S. bonds. Under a recent ruling the reserve banks may take over from the national banks at par the 2 per cent. U. S. bonds held by the national banks, taking with the bonds the note issue privilege attaching to the bond in the hands of the national bank. The national banks are thus enabled to dispose of these bonds at par—to an amount not exceeding \$25,000,000, however, in any one year. The reserve banks, at their option, may convert these two per cent. bonds with the circulation (i.e., note issue) privilege into three per cent. bonds without the circulation privilege. Before making such an exchange, of course, the notes outstanding against the two per cent bonds must be retired. This is accomplished in the same way as the retirement of national bank notes. Comparatively few Federal Reserve bank notes have been issued, but the number will be increased, at least temporarily by the present policy of retiring silver certificates and issuing reserve bank notes in place of them. This is being done in order that the silver coins held against the certificates may be melted and shipped abroad in settlement of trade balances, there being at present an embargo on the shipment of gold.

"greenbacks," of which \$346,000,000 have been outstanding since 1879.¹

Federal Reserve notes are the "elastic" currency so long desired—not quite so elastic, however, as was hoped for by the more radical proponents of a new banking measure, the need for which led to the passage of the Federal Reserve Act. While redeemable in gold, these notes, in the volume of exchangeable credit which they represent, vary in amount with the varying needs of business for a credit medium of exchange.

The provisions of the Act, together with the Amendments of June 21, 1917, relating to the issue of Federal Reserve notes, are in part as follows—slight changes in punctuation being made for the sake of clearness:

Authorization and issue of Federal Reserve notes.

—Sec. 16. "Federal Reserve notes, to be issued at the discretion of the Federal Reserve Board for the purpose of making advances to Federal Reserve banks through the Federal Reserve agents as hereinafter set forth and for no other purpose, are hereby authorized. The said notes shall be obligations of the United States and shall be receivable by all national and member banks and Federal Reserve banks and for all taxes, customs and other public dues. They shall be redeemed in gold on demand at the Treasury Department of the United States, in the

¹ "Greenbacks," or United States notes, were first issued during the Civil War. Following a period of fluctuation in value, due to lack of provision for redemption in specie, it was provided in 1879 that no more greenbacks should be issued, but that the amount outstanding, as shown by the books of the Government (\$346,681,016), should be kept in circulation, redeemable in specie, but reissued as soon as redeemed. As a reserve against demands for redemption a special fund of \$150,000,000 in gold is set aside in the Treasury at Washington.

city of Washington, District of Columbia, or in gold or lawful money at any Federal Reserve bank.

"Any Federal Reserve bank may make application to the local Federal Reserve agent for such amount of the Federal Reserve notes hereinbefore provided as it may require. Such application shall be accompanied with a tender to the local Federal Reserve agent of collateral in amount equal to the sum of the Federal Reserve notes thus applied for and issued pursuant to such application. The collateral security thus offered shall be notes, drafts, bills of exchange, or acceptances acquired under the provisions of section thirteen of this Act; or bills of exchange indorsed by a member bank of any Federal Reserve district and purchased under the provisions of section fourteen of this Act; or bankers' acceptances purchased under the provisions of said section fourteen; or gold or gold certificates; but in no event shall such collateral security, whether gold, gold certificates, or eligible paper, be less than the amount of Federal Reserve notes applied for."

In the foregoing paragraph it will be noted that provision is made for the issue of Federal Reserve notes directly against gold. While the notes can be issued in such a case only against gold of value equal to the face value of the notes, when the notes are so issued only 40 per cent of the gold against which the notes are issued is required to be held in reserve, the remaining 60 per cent serving as a reserve against other liabilities of the issuing bank—as against notes issued against commercial paper, for example. This provision is of far-reaching importance, and is in part the cause and in part the result of the policy of the Federal Reserve system of accumulating in the

vaults of the reserve banks as large a supply of gold as possible. The most inobservant reader will have remarked the recent disappearance of gold certificates, or "yellow-backs," from circulation and—in parts of the country where gold was formerly current—of gold itself. The Federal Reserve notes are, it is true, redeemable in gold, but only on demand at the Treasury Department. They are redeemable in gold or lawful money, however, at any reserve bank. It seems necessary, in the judgment of bankers and economists, to maintain gold as the only money, and to let all substitutes for money be redeemable in gold. This being the case, the acceptability of substitutes for money depends upon the certainty of redemption in gold on demand, and the greater the surplus of gold reserves for such redemption the greater will be the acceptability of the substitute currency and, obviously, the less the demand for redemption. Other reasons for the accumulation of gold in the vaults of the Federal Reserve banks, connected with foreign exchange, need not be considered here. The United States in 1922 held forty per cent of the world's monetary gold stock.

Reserve against notes.—A gold reserve of 40 per cent must be held against the reserve notes issued through a Federal Reserve bank. Since an inflexible rule against depletion of the reserve below this amount would compel, in effect, an additional reserve to be held as a "reserve against reserves," it is provided that the Federal Reserve Board may suspend any reserve requirement of the Act for a period not exceeding thirty days, and renew from time to time such suspension for periods not exceeding fifteen days, provided, however, that a grad-

uated tax shall be imposed upon any deficiency of reserves.¹

This graduated tax practically inhibits any serious reduction of reserves and operates to restore depleted reserves, in that while the tax is paid directly by the bank in which the deficiency has occurred, the bank must add the amount of the tax to the rates of interest and discount fixed by the Federal Reserve Board. The increase in rates reduces the demand for notes, and so tends automatically to restore the reserves.

Discount, rediscount and purchase of commercial paper.—In the foregoing sections we have seen how the reserve banks may issue Federal Reserve notes against approved commercial paper, thus adjusting the amount of currency in circulation to the current needs of business. We must now consider briefly the several forms and classes of commercial paper in which member banks and reserve banks are permitted to deal. The explanation which follows will not be difficult to understand if we bear in mind the distinction between the several terms employed—loans; discounts; rediscounts; and purchases.

Loans.² A loan, for our present purpose, is an advance of funds made by a bank to a customer on a promissory

¹ Until the reserve falls below 32.5 per cent, the tax upon the deficiency is at the rate of only 1 per cent per annum, but below this point the tax is increased to a rate "increasingly of not less than one and one-half per centum per annum upon each two and one-half per centum per annum that such reserve falls below thirty-two and one-half per centum per annum."

² Loans may also be made by reserve banks to member banks, for periods not to exceed fifteen days, against collateral put up by the member bank. Renewal of fifteen-day loans is not prohibited. Besides commercial paper, the collateral on such loans may be customers' notes, of not over 90 days, secured by United States bonds or certificates of indebtedness.

note, secured or unsecured—a typical form being the customer's unsecured, "single-name" note.

Discounts: A purchase by a bank of its customer's "receivables" indorsed by the customer, and on which the customer remains liable. Interest is deducted in advance. The customer's own note is also "discounted" by the bank.

Rediscounts: Purchases by a reserve bank of a member bank's "receivables," indorsed by the member bank, and on which, of course, the member bank remains liable.

Purchase: The buying outright of the paper of "outsiders," with or without the indorsement of a member bank. Purchase is of interest principally in connection with "open-market" operations of reserve banks, described hereinafter.

The operations by which additional currency is put into circulation are those (1) in which the reserve banks rediscount paper for member banks; (2) in which reserve banks purchase paper in open-market operations. Upon the liquidation of the paper, the currency issued against it is automatically retired from circulation.

Paper eligible for rediscount or purchase.—"Eligible" paper is that which the Federal Reserve banks are permitted to rediscount or purchase. The requirements of eligibility are not quite the same in these respective operations. Notes, drafts and bills of exchange are eligible for rediscount, but notes are not eligible for purchase in open-market operations. "Demand" paper in no case is eligible, as it has no fixed date of maturity. "On or before" paper may be eligible, but is looked upon with disfavor. In general, no paper is eligible unless it has grown out

of bona fide commercial transactions, as distinguished from paper drawn for purposes of investment or speculation, with the exception that paper drawn for the purpose of purchasing or carrying United States bonds or notes is eligible, if conforming otherwise to the requirements. No paper with a maturity of more than 90 days, exclusive of days of grace, is "eligible," except "six months' agricultural paper," in the form of promissory notes or trade acceptances, described hereinafter.

REDISCOUNTS

Paper eligible for rediscount.—A note, draft or bill of exchange to be eligible for rediscount:

(a) Must be one the proceeds of which have been used or are to be used in producing, purchasing, carrying or marketing of goods¹ in one or more steps of the process of production, manufacture or distribution.

(b) Must not be one the proceeds of which have been used or are to be used for permanent or fixed investments of any kind, such as land, buildings, or machinery.

(c) Must not be one the proceeds of which have been used or are to be used for investments of a purely speculative character.

(d) May be secured by the pledge of goods or collateral, provided it is otherwise eligible.

The various "eligible" notes, drafts or bills of exchange may be grouped under the following heads:

1. Promissory notes
2. Trade acceptances
3. Agricultural paper

¹ The word "goods," as used in this connection, is construed to include goods, wares, merchandise, or agricultural products, including live stock.

4. Commodity paper
5. Bankers' domestic acceptances
6. Bankers' foreign acceptances
7. Bankers' foreign acceptances drawn for the purpose of furnishing dollar exchange.¹

It must be noted here that while it is true in general that a draft accepted by a member bank may be rediscounted at a reserve bank, a member bank may accept certain drafts having six months' sight to run but may not rediscount them until such a period has elapsed as will bring them within a maturity of 90 days, exclusive of days of grace, which is generally a condition of eligibility for rediscount. For the sake of brevity, the phrase "exclusive of days of grace" may here be taken for granted whenever the date of maturity hereinafter is mentioned.

Promissory notes—A promissory note, to be eligible for rediscount, must be "an unconditional promise, in writing, signed by the maker, to pay, in the United States, at a fixed or determinable future time, a sum certain in dollars to order or to bearer," and must be of a maturity, at the time of rediscount, of not more than 90 days, except that agricultural or live stock paper whether in the form of promissory notes or acceptances, may have a maturity not exceeding six months.

The proceeds of a promissory note, if it is to be "eligible," must be used for commercial purposes. However, since it is difficult to trace the proceeds of a promissory note to their actual application to commercial purposes, it is assumed that the proceeds are used for commercial purposes if the borrower is engaged in a commercial pur-

¹ See page 680.

suit, and if he has a reasonable excess of liquid assets over current liabilities. The assumption is, that under such circumstances an amount equivalent to that of the loan will be taken out of the borrower's liquid assets and applied to commercial purposes, whatever disposal may be made of the actual or immediate proceeds of his note. The Federal Reserve bank must be satisfied of the responsibility of the borrower, as well as of the purposes for which the proceeds of the note are intended, and may require a financial statement, but it is authorized to waive the requirement of a statement in the following circumstances: if the note is secured by a warehouse or similar receipt; or if the aggregate of the obligations of the borrower rediscounted and offered for rediscount at the reserve bank is less than a sum equal to 10 per cent of the paid-in capital of the member bank and does not exceed \$5,000.

By statute it is provided that "The aggregate of notes, drafts, and bills bearing the signature or indorsement of any one borrower, whether a person, company, firm or corporation rediscounted for any one member bank shall at no time exceed 10 per cent of the unimpaired capital and surplus of such bank; but this restriction shall not apply to the discount of bills of exchange drawn in good faith against actually existing values." Promissory notes, accordingly, come within this restriction, without exception.

Trade acceptances.—A draft or bill of exchange, as defined by the Federal Reserve Board, for the purpose of rediscounts, is "an unconditional order in writing, addressed by one person to another, other than a banker as

defined under B (b)¹, signed by the person giving it, requiring the person to whom it is addressed, to pay, in the United States, at a fixed or determinable future time, a sum certain in dollars to the order of a specified person; and a trade acceptance is defined as a draft or bill of exchange drawn by the seller of goods on the purchase of goods sold and accepted by such purchaser." The "10 per cent limit" mentioned above does not apply to acceptances, which are construed not to be loans of the kind which it is intended to restrict. While there is a limit upon the amount of bank acceptances which may be rediscounted, as we shall see later, there is practically no limit to the amount of trade acceptances which may be rediscounted, even for the same bank and the same drawer. The justification for this provision is that trade acceptances are "drawn against existing values"—they are secured by goods which have been or shortly are to be sold.

A Federal Reserve bank is required "to take such steps as it deems necessary to satisfy itself as to the eligibility of the draft or bill offered for rediscount, unless it presents *prima facie* evidence thereof or bears a stamp or certificate affixed by the acceptor or drawer showing that it is a trade acceptance." The standard form of trade acceptance recommended by the American Trade Acceptance Council bears on its face the word "accepted;" with

¹ Federal Reserve Board Regulation A, Series of 1917. The Federal Reserve Board interprets the Act and issues rulings and regulations from time to time, which rulings and regulations govern the policies and practices of reserve and member banks. The policy of the Board in its interpretations generally is to lay down as few inflexible rules as possible, but to leave the bank itself, within certain limits, as free as possible to solve its own peculiar problems.

spaces for insertion of date of acceptance, place of payment, and signature of acceptor; and bears also the following statement, which identifies the bill as being a trade acceptance: "The obligation of the acceptor hereof arises out of the purchase of goods from the drawer. The acceptor may make this acceptance payable at any bank, banker or trust company in the United States which he may designate."

TRADE ACCEPTANCE Date May 24/18

No. 5 New York, N. Y. January 24th 1918 \$ 2500.00

Pay to the order of OURSELVES after date pay to the order of OURSELVES

The obligation of the acceptor hereof arises out of the purchase of goods from the drawer, maturity being in conformity with original terms of purchase. The drawee may accept this bill payable at any bank, trust company or other office in the United States which he may designate.

To: 22 - 1st Street Date May 24/18

Signature of Acceptor: C. H. R. C.

Trade Acceptance

To be eligible for rediscount, a trade acceptance must be indorsed by a member bank and must have a maturity at the time of rediscount of not more than 90 days, unless it is "agricultural paper," in which case it must have a maturity not exceeding six months.

A trade acceptance may arise from either domestic or foreign commercial transactions, but must in all cases be payable in dollars in the United States.

A very practical reason for the adoption of the trade acceptance, from the point of view of the business man, is that it is classed as prime commercial paper and ad-

mitted to rediscount at a preferential rate, about one-half of one per cent lower, as a rule, than that fixed for promissory notes.

From the point of view of the banker, acceptances are desirable, since they are the most liquid form of commercial paper and are an excellent investment for secondary reserves.

The great mission of the trade acceptance is to displace the open book-account. The principal opposition to its introduction has come, perhaps, from merchants who have been in the habit of selling goods to retailers on an open book-account, and charging higher than cash prices to those who have been unable to purchase on cash terms. This, in the judgment of those who have been accustomed so to do, constitutes a sort of "bankers' profit" for the wholesaler, who is reluctant to give up what he regards as a prerogative. Retailers also, who have been able to avail themselves of cash discounts, have feared that the introduction of the trade acceptance would take away the advantage they had formerly possessed over their weaker competitors who, by reason of their inability to take advantage of discounts for cash payment, have been forced to pay the equivalent of interest at the rate of as much as 60 per cent per annum on the value of goods purchased on the open book-account. Fair-minded people, of course, can have no sympathy with those who would withhold from business a means of cheapening and facilitating commercial transactions merely for the sake of a selfish advantage.

Opposition has come also from shippers who have honestly feared that their own credit would be impaired by

the creation of a very much larger contingent liability than that which they had been accustomed to carry under the book-account system; for the shipper, of course, is liable, along with the buyer, for the payment of the acceptance at its maturity. This objection is not a valid one, for the shipper's credit is strengthened, everything considered. He may have less power to borrow on his personal note—this cannot be denied—but at the same time he has less need to borrow. He is supposed to exercise due caution in making sales, and the risk of default on the part of the buyer is real or negligible according to the care which the shipper himself has exercised. The use of the acceptance makes more vivid the need for greater care in credit-extension, but lessens, rather than increases, the amount of risk. Losses from bad debts are reduced; over-due accounts are more easily collected, since the seller has the acceptance as evidence of the debt, as well as the definite promise of the debtor to pay at a certain time; again, the fact that the goods must be paid for at a certain time causes the buyer to estimate his needs and his resources more carefully and to refrain from buying injudiciously. It is certain that in view of all these considerations the shipper must find himself in a stronger financial condition than he would be under the book-account system.

The real reason, of course, why the acceptance has not yet come into general use in the United States is that it is new. The average business man always prefers to let some one else make his experiments. The educational campaign conducted by the Federal Reserve banks, by alert bankers and business men everywhere, and especially

by the American Trade Acceptance Council, composed of representatives of the National Association of Credit Men, the Chamber of Commerce of the United States, the American Bankers Association, and the National Association of Manufacturers, must result in a steady increase in the knowledge and use of the trade acceptance until it becomes a standard instrument in commercial transactions, as familiar and as indispensable as the check.

Six months' agricultural paper.—Six months' agricultural paper, as defined by the Federal Reserve Board for purposes of rediscount, is "a note, draft, bill of exchange, or trade acceptance drawn or issued for agricultural purposes, or based on live stock; that is, a note, draft, bill of exchange, or trade acceptance the proceeds of which have been used, or are to be used, for agricultural purposes, including the breeding, raising, fattening, or marketing of live stock and which has a maturity at the time of discount of not more than six months, exclusive of days of grace."

To be eligible for rediscount six months' agricultural paper must comply with the regulations which would apply to it if its maturity were 90 days or less.

Commodity paper.—Commodity paper must be of a maturity of not more than 90 days, and is defined as "a note, draft, bill of exchange, or trade acceptance accompanied and secured by shipping documents or by a warehouse, terminal, or other similar receipt covering approved and readily marketable, non-perishable staples properly insured."

Commodity paper, to be eligible for rediscount, must conform to the requirements laid down by the Federal

Reserve Board with respect to shipping documents, receipts, insurance and the like, and must be paper on which the rate of interest or discount, including commission, charged the maker, does not exceed 6 per cent per annum.

The special rate on commodity paper is intended to assist actual producers during crop-moving periods, and the Board reserves the right to suspend the rates whenever it is apparent that the movement of crops, which it is intended to facilitate, has been practically completed.

Banker's acceptance, defined.—A banker's acceptance is defined by the Federal Reserve Board as "a draft or bill of exchange of which the acceptor is a bank or trust company, or a firm, person, company, or corporation engaged in the business of granting acceptance credits." It will be noted that to constitute the acceptance a banker's acceptance, only the acceptor need be a bank or firm engaged in the business of granting acceptance credits except in the case of bankers' acceptances drawn for the purpose of furnishing dollar exchange, in which case the drawer as well as the acceptor must be a bank or banker—the acceptor, moreover, being required to be a member bank.

To be eligible for rediscount the bill must have been drawn under a credit opened for the purpose of conducting, or settling accounts resulting from, a transaction involving the domestic or foreign shipment of goods, subject to the restrictions or limitations imposed by the Act or by regulations of the Federal Reserve Board covering such acceptances, the more important of which restrictions or limitations will be noted briefly in the pages that follow.

Besides rediscounting bankers' domestic or foreign acceptances, any Federal Reserve bank, subject to the approval of the Federal Reserve Board, may acquire drafts or bills drawn by banks or bankers abroad and payable in the United States for the purpose of furnishing dollar exchange. The three classes of bankers' acceptances or bills herein referred to are described briefly in the following sections.

Bankers' domestic acceptances.—Bankers' domestic acceptances, the manner of using which is touched upon in the chapter on "Credit," are invariably secured by shipping documents or warehouse or similar receipts. Member banks are permitted to accept domestic bills of not more than six months' sight, but to be eligible for rediscount these bills must be of not more than 90 days' maturity at the time of rediscount, and must be indorsed by at least one member bank. The acceptance may grow out of a domestic shipment of goods, or the storage of goods, but as noted above, the domestic bill is invariably secured by shipping documents attached at the time of acceptance, or secured by warehouse receipts or other such documents conveying or securing title covering readily marketable staples. If it should be necessary to release the documents carrying title to the goods, other collateral must be substituted.

Such acceptances do not come under the "10 per cent limit"—that upon loans which a member bank may make to a single borrower, which loans may not in any given case exceed 10 per cent of the bank's capital and surplus—but in no event is a member bank permitted to make acceptances of domestic bills to an amount exceeding 50

per cent of its unimpaired and paid-in capital and surplus. The aggregate of its domestic and foreign acceptances, however (exclusive of acceptances drawn by foreign banks or bankers for the purpose of furnishing dollar exchange), may be to the extent of 100 per cent of its paid-in capital and surplus, but only under a special permit granted by the Federal Reserve Board to such member banks as make application for such permit and show that the business and banking conditions prevailing in their districts justify them in seeking the privilege. Such a permit may be granted only to banks that have an unimpaired surplus of at least 20 per cent of their paid-in capital, and the permit may be revoked by the Board upon 90 days' notice to the member bank.

Bankers' foreign acceptances.¹—A banker's foreign acceptance is a banker's acceptance growing out of the importation or exportation of goods. To be eligible for rediscount, it must have a maturity of not more than 90 days, and must be indorsed by at least one member bank. The limit to the amount of foreign bills which a member bank may accept is 50 per cent of its paid-in capital and surplus, except when a "100 per cent permit" is secured from the Federal Reserve Board, as explained in the preceding section, in which event it may accept an aggregate of domestic and foreign bills up to 100 per cent, of which, however, not more than 50 per cent may be domestic bills.

This limitation, as explained above, is entirely distinct from and not affected by the limitation noted in the fol-

¹ Changes are made from time to time in the law and regulations affecting bankers' acceptances. Some large banks issue from time to time booklets covering bank acceptance practice. For example, see those of the American Exchange National Bank of New York.

lowing section, governing the amount of bills that may be accepted for the purpose of furnishing dollar exchange.

Bankers' foreign acceptances drawn for the purpose of furnishing dollar exchange.—Any member bank may accept and any reserve bank may rediscount "drafts or bills of exchange drawn upon it having not more than three months' sight to run, exclusive of days of grace, drawn, under regulations to be prescribed by the Federal Reserve Board, by banks or bankers in foreign countries or dependencies or insular possessions of the United States for the purpose of furnishing dollar exchange as required by the usages of trade in the respective countries, dependencies, or insular possessions.

"No member bank shall accept such drafts or bills of exchange for any one bank to an amount exceeding in the aggregate 10 per centum of the paid-up and unimpaired capital and surplus of the accepting bank unless the draft or bill of exchange is accompanied by documents conveying or securing title or by some other adequate security. No member bank shall accept such drafts or bills in an amount exceeding at any time in the aggregate one-half of its paid-up and unimpaired capital and surplus. This 50 per cent limit is separate and distinct from and not included in the limits placed upon the acceptance of drafts and bills of exchange as described under section A of this regulation"¹ (explained above).

The distinctions, it will be observed, between bankers' acceptances of the class here referred to and those referred to in the preceding section are in (1) that in the case of the acceptances here referred to, the drawer of the

¹ Federal Reserve Board Regulation A, series of 1917.

bill must be a *bank* or *banker*, and the acceptor a *member bank* (which must, moreover, have applied for and received the necessary authority from the Federal Reserve Board); and (2) that whereas the bankers' acceptances referred to in the preceding section must have grown out of specific transactions involving the importation or exportation of goods, the acceptances of the class covered by the present section are not necessarily limited to those growing out of specific shipments of goods, but may be drawn for the transfer of funds for any legitimate purpose as required by the usages of trade in the countries of their origin, and as approved by the Federal Reserve Board. This provision enables member banks conveniently to maintain their required balances abroad and foreign banks to adjust conveniently their balances in the United States.

OPEN-MARKET PURCHASES

Open-market operations authorized.—By section 14 of the Federal Reserve Act it is provided that Federal Reserve banks, under rules and regulations to be prescribed by the Federal Reserve Board, may purchase and sell in the open market from banks, firms, corporations, or individuals, cable transfers, bankers' acceptances and bills of exchange of the kinds and maturities made eligible by the Act for rediscount, with or without the indorsement of a member bank. Promissory notes are not eligible for purchase on the open market.

Besides the specified forms of commercial paper, reserve banks are permitted to purchase and sell in the open market: gold coin and bullion; bonds and notes of the

United States ;and certain classes of municipal obligations.

In order that such transactions in foreign markets could be carried on it was provided, in section 14 of the Act, that accounts should be opened with foreign correspondents and agencies.

Bills of exchange and trade acceptances in open-market operations.—To be eligible for purchase the bill must have arisen out of an actual commercial transaction, domestic or foreign, and must have a maturity at the time of purchase of not over 90 days, exclusive of days of grace. Unless indorsed by a member bank a bill is not eligible for purchase until a satisfactory statement has been furnished of the financial condition of one or more of the parties thereto.

Bankers' acceptances in open-market operations.—A banker's acceptance, to be eligible for purchase in open-market operations, must have a maturity at the time of purchase of not over 90 days, exclusive of days of grace, and must have been drawn under a credit opened for the purpose of conducting, or settling accounts resulting from, a transaction or transactions involving:

1. Importation or exportation of goods;
2. Domestic shipment of goods, provided that shipping documents accompany the bill at the time of its acceptance; or
3. The storage within the United States of readily marketable goods, provided the acceptor of the bill is secured by warehouse, terminal or other similar receipt; or
4. The storage within the United States of goods which have been actually sold, provided the acceptor of the bill is secured by the pledge of such goods; or

5. It must be a bill drawn by a bank or banker in a foreign country for the purpose of furnishing dollar exchange.

In the latter case, the bank or banker drawing the bill must be in a country, dependency or possession whose usages of trade have been determined by the Federal Reserve Board to require the drawing of bills of this character.

"The Federal Reserve bank before purchasing a banker's acceptance, must be satisfied, by reference to the acceptance itself or otherwise, that it is eligible for purchase. Satisfactory evidence of eligibility may consist of a stamp or certificate affixed by the acceptor, in form satisfactory to the reserve bank. No evidence of eligibility is required with respect to a bill accepted by a national bank."

Bankers' acceptances, other than those accepted or indorsed by member banks, are eligible for purchase only after the acceptor has furnished a satisfactory statement of financial condition in form to be approved by the Federal Reserve Board, and has agreed in writing with a Federal Reserve bank to inform it on request concerning the transactions underlying such acceptances.

The purpose of the section of the Act permitting Federal banks may exercise a beneficial and stabilizing influence upon the market for commercial paper and particularly that they may have a means of controlling the rates.

In defining the classes of commercial paper which it makes eligible for rediscount and then fixing the rates of interest and discount—forcing the rates down, if necessary, by purchases of commercial paper in the open mar-

ket, the Federal Reserve system renders business in general a service the value of which it would be difficult to estimate. Not only is a direct aid thus rendered to business, but also an indirect aid—in the promoting of better business methods. The primary function of the system, of course, is to adjust the volume of exchangeable credit to the amount required as a medium of exchange for legitimate commercial transactions.

The Federal Reserve system, as will have been observed, is directly concerned solely with short-term commercial credit. There still remains, it would seem, something to be devised to meet the need for long-term industrial credit, which need, while not always so pressing, is fully as legitimate a need as that for short-term credit. Certainly, the adjustment of the supply of short-term credit tends to facilitate also the transactions which involve long-term credit, since capital is left free for investment purposes which would otherwise be required for the financing of commercial transactions, but undoubtedly, there is room for some direct assistance to business in view of its need for fixed capital as well as for temporary or working capital. When the workings of the present system have been more adequately observed, it is possible that a long-term credit system may be devised.

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EXCHANGE

The meaning of "exchange."—Wherever there is a traffic in goods, there is a corresponding traffic in money or credit with which the goods are paid for. The currents of payment flow in a direction opposite to that of the movement of the goods. Somewhat as railroad and steamship lines form a system for transporting the goods, the banks that deal in exchange form a system for transporting credit.¹ This bank credit, convertible into the monetary units current at the place of payment, is known as "exchange."

"Exchange," in a slightly different sense, means also the *process* of paying money in a distant place, through the transfer of bank credit convertible into money at the place of payment. Domestic exchange is that used for transferring funds within a single country; foreign exchange for the transfer of funds from one country to another country.

The need for exchange.—The transactions which make necessary the transfer of funds, giving rise to the use of domestic and foreign exchange, may be summarized as follows:

1. The buying and selling of merchandise.
2. The buying and selling of securities, such as stocks and bonds; also, the payment of dividends and interest to the holders of the securities.

¹For an explanation of credit see the chapter on "Banking."

3. The making and subsequent repayment of long-term and short-term loans; also, the payment of interest on the loans.

4. The purchase and operation of business enterprises at a distance or abroad.

5. Minor transactions, among which may be mentioned: use of traveler's letters of credit; payments for legal and other services rendered; remittances made by immigrants.

The theory of exchange.—As between the individuals who settle their accounts by payment in exchange, each transaction is complete in itself. The process of making payment in exchange, and the various types of "bills of exchange," will be explained later in this chapter. It is sufficient here to say that the typical transaction is one in which goods are purchased and paid for by the deposit of funds in the buyer's bank and the transfer of the funds to the seller's credit in his own bank.

As between the banks which act as intermediaries in the settlement of accounts between buyers and sellers, however, debits and credits tend to cancel, and the only money that is used is for settlement of the balance, or difference.

As between countries, likewise, or between sections of the same country, exports pay for imports, and the only actual money that changes hands is the amount of the difference in value between imports and exports.

Exchange, therefore, so far as the transfer of funds between communities is concerned, is little more than a rather elaborate system of bookkeeping.

The "system of exchange."—As noted above, the

banks which deal in exchange form a "system" for the transfer of credit. The transactions which give rise to the need for payment in exchange involve buyers and sellers, with their local banks, in all parts of the country, and in all quarters of the globe. Obviously, it would be impossible for each bank in the country, or in the world, to keep funds on deposit in every other bank, in order that drafts might be issued against such deposits when required. It is possible, however, for each bank of importance to keep funds on deposit with banks at central points, where drafts can be charged to one bank's account and credited to that of another, somewhat as at a local clearing house.

The process of exchange.—There are two methods by which accounts may be settled by the use of exchange. The debtor may purchase a bank draft and send it to the creditor, or the creditor may draw a draft upon the debtor.

If the debtor takes the initiative, the process is as follows: The debtor goes to his bank and buys, perhaps, a New York draft for the amount he owes. This draft is an order from the local bank to its correspondent bank in New York, requesting the New York bank to pay the sum specified to the person named as payee, or to his order. The debtor then sends this draft—known as New York exchange—to the creditor, who "cashes" it or deposits it for credit to his account, just as he would "cash" or deposit a check. The creditor's bank is willing to "cash" the draft, because it is the obligation of a bank, payable at a central point, where the creditor's bank also keeps an account. This bank then sends the draft to its

New York correspondent for collection and credit to its New York balance.

If the creditor "draws" on the debtor, the process is as follows: The creditor writes an order requesting the debtor to pay to the order of the creditor or his agent the sum specified and to charge same to the drawer's account. Collection of such a draft may be made by the creditor through a chain of banks, as follows: (1) the creditor's bank; (2) this bank's New York correspondent; (3) the New York correspondent of the debtor's bank; and (4) the debtor's bank.

Domestic bills of exchange.—The two classes of drafts used in domestic exchange are commercial drafts and bank drafts, the uses of which are described briefly in the chapters on "Credit" and "Banking."

Bank drafts are drafts drawn by the cashier of a bank upon another bank at which the first bank has established a credit—that is, in which it has funds on deposit. The typical bank draft is a draft upon a New York bank, and is called "New York exchange." (It is understood, of course, that the draft itself is not the exchange, but that the exchange is the credit evidenced by the draft.) New York exchange, among banks, is credit of general acceptability, since practically all important banks have frequent need of New York exchange, and maintain relations with one or more New York banks. The exchange facilities afforded by the Federal Reserve banks will, naturally, tend more and more to lessen the relative importance of New York exchange, the reserve bank of each district becoming an intermediary for member banks of the district for the clearing of bills of exchange.

Foreign bills of exchange.—In foreign exchange the instruments by which credit is transferred are of three general kinds—commercial bills of exchange, bankers' bills and letters of credit. As to time of payment, these are classed as short bills and long bills. Short bills are those which have not over 30 days to run; long bills have more than 30 days to run. Short bills include bills payable at sight or on demand.



Foreign Bill of Exchange

A bill payable at or after sight has no date of maturity until it has been presented to the drawer.

Commercial bills are classed, in the first place, as "clean" or "documentary."

A commercial "clean bill" has no shipping papers or other documents attached, and may be either short or long, but is usually drawn at 60 or 90 days. It has no maturity until accepted. Until accepted, a clean bill is "one-name paper;" after acceptance it is "two-name paper." It has no security except the credit of the drawer and, after acceptance, of the drawee.

A commercial "documentary bill" is always secured by the papers which carry the title to the merchandise the sale of which the bill represents. The bill of lading, invoice, or other papers may be accompanied by an "hypothecation certificate," specifically pledging the goods covered by the documents, for the protection of the banker who discounts the bill. The hypothecation certificate may be an individual certificate, covering only the one shipment, or it may be a "blanket" certificate, covering all current transactions between the exporter and his banker. There will also be an "insurance certificate," stating the amount for which the goods are insured, and the name of the company which issued the insurance.

Such bills are usually long bills, but may be drawn at sight, or may run anywhere from 7 days to 60 or 90 days' sight.

Commercial documentary bills are classed as "acceptance bills," in which case the documents are to be released to the consignee upon acceptance of the bill; or "payment bills," in which case the documents are not to be released until the bill is paid. Commercial documentary bills are usually acceptance bills. The fact that a payment bill is drawn instead of an acceptance bill is not necessarily, however, a reflection upon the honor or credit of the drawee, for in some classes of dealings the payment bill is the customary form.

It is a practice, generally, to have bills sent abroad discounted immediately upon their arrival and the proceeds credited to the account of the drawer. Since the discount markets will take only clean bills (those without documents attached), an acceptance bill may be discounted as

soon as accepted by the consignee, for then the documents are released. A payment bill, however, cannot be discounted, as the documents remain with the bill until it is paid, and the bankers who discount bills, besides being wary of a bill upon which security seems to be necessary, do not care to be troubled with the disposal of the papers; therefore, they refuse to receive payment bills for discount.

A payment bill, however, may be more profitable than an acceptance bill, because it is likely to be paid at once, as the drawee usually desires to get possession of the goods as soon as possible. The time when a payment bill is "taken up under rebate" is the important factor, of course. If the bill is drawn at 60 days and is paid upon presentation, the buyer of such a bill gets a larger return than he would get if the bill had been discounted, for the rebate rate is lower than the discount rate. If it is not paid until maturity, however, as may happen, the buyer of the bill cannot get the use of his money for 60 days, and suffers a loss, as compared with what he would have received for the handling of an acceptance, or discountable bill.

Bankers' bills.—Bankers' bills are of two classes—"short bills" and "long bills." Most of the short bills are "sight bills," also called "demand drafts" or "checks," drawn by bankers against their balances on deposit in banks in the various financial centers and payable on presentation. When haste in payment is required, "cables" are sent instead of sight bills, a "cable" being an order to pay, transmitted by cable.

Long bills are of three kinds, and are usually drawn at

60 or 90 days' sight. The three classes of long bills are: (1) bills drawn in ordinary business operations, as when a client desires to pay an obligation abroad—maturing in perhaps 60 days—with funds he has on hand, and so buys a time draft, which costs less than a demand draft; (2) long bills arising from the making of foreign loans; (3) finance bills. The finance bill is a means by which the banker borrows funds from foreign centers where money may be cheap and lends them at home, where interest rates may be higher. He “covers” his maturing finance bill by remitting sight exchange, which he purchases in the market at the best price he can.

Letters of credit.—Letters of credit are of two classes—travelers' letters and commercial letters. In either case, the letter of credit is a letter authorizing the holder to draw upon the correspondents of the issuing bank for the amount specified, the issuing bank engaging to reimburse the correspondent upon presentation of the original draft.

The travelers' letter of credit is issued for the convenience of tourists, and is a circular letter addressed to correspondents of the bank at various points on the tourist's route, requesting these correspondents to honor the tourist's drafts up to a specified amount.

The commercial letter of credit is used for paying exporters of goods in foreign countries, and authorizes the holder to draw upon the issuing bank for the amount and under the conditions specified in the letter of credit. The documents conveying title to the goods are security for the protection of the bank, so that the purchaser of the letter of credit does not have to pay for the goods until

their arrival, while the shipper of the goods is able to get his money at once, upon turning over to his bank the letter of credit with the bill of lading, invoice and other shipping papers. This bank then forwards the papers to the issuing bank, which holds them pending the arrival of the goods and payment therefor by the consignee.

Foreign letters of credit, like other instruments of foreign exchange, are generally drawn in pounds sterling, which is the world's currency, on account of the facilities of London for making payments or collections in any part of the world.

The price of bills of exchange.¹—The rate quoted on foreign exchange is fixed by the price of "cables," which, of course, approximates the rate actually existing at any given time. The theory is, that when a debtor purchases cable exchange, the banker transfers his foreign credit immediately to the payee, and does not enjoy for any appreciable time the use of the funds which he receives from the purchaser of the exchange. The cable rate, accordingly, is the highest.

If a sight draft is sent, the banker can sell it at a lower price than a cable, for he has the use of the funds at least while the bill is in transit.

Time drafts can be sold at a lower price still, for the banker will not have to pay the draft abroad for 60 or 90 days.

Various factors, of course, affect the price of exchange, but the fundamental relationship of the prices of cables, short bills and long bills is that described above.

The foregoing applies only to "prime" bankers' bills,

¹ See Franklin Escher, *Foreign Exchange Explained*.

concerning the payment of which when due there is not the slightest doubt. In practice, the price of commercial bills varies according to the prestige and reputation of the drawer and of the drawee.

The price of exchange, as referred to in the foregoing, is merely the relative price of different classes of bills. The rate or price of exchange, as between one country and another, will be considered in the following section.

The rate of exchange.—The intrinsic relation of the monetary unit of one country with that of another is expressed by the “par of exchange,” which never varies—the par of exchange being, for practical purposes, the ratio between the weights of the precious metal (usually gold) contained in the standard coins of the respective countries.¹ For example, the par of exchange between the United States and England is 4.8665, this being the amount of gold in the pound sterling as compared with the amount of gold in the standard U. S. dollar.

The “rate of exchange,” however, as distinguished

¹ The par of exchange on important countries, calculated from the United States Mint's intrinsic valuation of their standard coin in terms of American currency, is as follows:

| | |
|----------------|---------------------------------------|
| Argentina..... | 42.45 cents to the paper dollar |
| Austria..... | 20.3 cents to the crown |
| Canada..... | \$1.00 to the dollar |
| Denmark..... | 26.8 cents to the krone |
| England..... | \$4.86 $\frac{5}{8}$ to the sovereign |
| France..... | 19.3 cents to the franc |
| Germany..... | 23.82 cents to the mark |
| Holland..... | 0.2 cents to the florin |
| India..... | 48.66 cents to the rupee |
| Japan..... | 49.8 cents to the yen |
| Russia..... | 51.2 cents to the ruble |
| Spain..... | 19.3 cents to the peseta |

Par of New York exchange on Italy and Switzerland is the same as that on France; the franc, lira, and peseta are all valued by the Mint at 19.3 cents. Par of exchange on Norway and Sweden is the same as on Denmark.

from the "par of exchange," is the rate at which the monetary units of one country actually exchange for those of another.

If it cost nothing to ship gold between the United States and England, the rate of exchange on London would always be at par. Exchange on London, or "sterling exchange," during the war, was "pegged," or fixed by agreement, at a point slightly below par, called the "war par." The agreement referred to—made between the United States, Great Britain and France—was for the purpose of preventing the fluctuations in the rate which would have occurred because of the fact that it was inexpedient to subject gold to the ocean risk. Normally, of course, the transfer of gold steadies the rates.

Even in normal times, however, there is a cost and a risk attached to the shipment of gold, so that the rate of exchange may vary within the "gold points," that is within the limits above and below par set by the cost and risk of shipping gold instead of making payments in exchange.

The rate, or price, of exchange, in normal times, is determined, like the price of other commodities, by supply and demand, the extent of the possible fluctuation being limited by the fact that when the price of exchange goes to a point above the cost of making payment by shipping gold, gold will be used in making payment; the supply of exchange will be proportionately increased, and the price will fall. This is conditioned, of course, upon the absence of legal restrictions upon the "purchase" and shipment of gold.

The supply of and demand for exchange, as between

any two countries, and as a factor in the rate of exchange between these two countries, does not depend alone upon their trade relations with each other, but upon the "balance of trade" which results from the average of the accounts of one country with all the countries with which it trades. This may be illustrated readily by using for comparison the facts which determine the condition of the bank account of an individual. A, the depositor, may have business dealings with B, C, D and E. Obviously, the size of his bank balance, and consequently the state of his credit, does not depend upon his dealings with any one of the group, but upon his debits and credits with respect to all. He may be indebted to B; but C, D and E may each owe him a greater amount, so that the balance of credit may be in his favor. He may convert the credit into a bank deposit, or into money; and his supply of "exchange" will be ample for payments to any of the group.

Obviously, then, as between countries A, B, C, D and E, if A's balance of trade is favorable, with respect to the group as a whole, the fact that A may be indebted to B does not mean that its credit in B is impaired and regarded as worth less than par. A may have an abundance of credit in C, D and E, which may be transferred to B in payment of A's indebtedness. Where the credit is abundant, its price falls; and if the price of A's credit in B, where the credit is deficient, tends to rise, payment in B may be made through C, D or E, by triangulation. By this means, under normal conditions, the rate of exchange as between one country and all other countries tends to be equalized, regardless of individual debits and credits.

Under war conditions, of course, the forces which ordinarily determine the rates of exchange between countries are deranged and made in great part inoperative. Not only is trade diverted from its usual channels, but also the movement of gold which ordinarily stabilizes the rates is checked. The United States, for example, laid an embargo on the export of gold. Such a course, no doubt, is expedient, for shipment of gold, when tonnage is needed for other purposes, is expensive, and the sea-risk undeniably was great.

Each country desires to keep in its possession as much gold as possible, with a view to providing a stable basis for the issue of currency, if for no other purpose. So far as the rates of exchange are concerned, of course, the hoarding of gold cannot strengthen them, any more than an individual could strengthen his own credit by hoarding gold instead of using it to pay his debts. So long as gold is the money of the world, the world's debts are payable in gold—such as are not cancelled by the exchange of goods. Hoarding of gold is therefore of no value as a business or economic expedient, if the purpose of the hoarding is merely to accumulate "wealth." If the supply of currency is deficient, however, the accumulation of a gold reserve against which notes may be issued may be justifiable.

An excellent illustration of the economic effect of checking the movement of gold between countries is seen in the rate of exchange for Spanish pesetas—of a mint par of 19.30 cents, but which exchanged during the war for 30 cents. Importers of goods from Spain could not ship gold, because of the embargo. The balance of trade

as between Spain and the United States was very favorable to the United States; yet the rate of exchange was very favorable to Spain, because the United States could not ship gold to Spain to settle its obligations. As between Spain and England, however, the trade balance was in favor of Spain, and sterling was cheap in Spain. Spain, accordingly, bought sterling exchange at home where it was cheap and used it to settle accounts in the United States where sterling was practically at par, because it had been "pegged."

Various plans involving international co-operation have been suggested for stabilizing rates of exchange.

Rates of exchange on important countries.—The most important rate of exchange is that on London. In New York, the rate on London is the price in dollars and cents which must be paid for each pound sterling of a sizable draft, payable on presentation, drawn by a banker in New York on a banker in London.

One pound sterling contains as much fine gold as 4.8665 standard U. S. gold dollars. The par of exchange between New York and London, accordingly, is 4.8665. In practice, the market rates are quoted in a progression of $\frac{1}{8}$ of a cent per pound sterling, as 4.86, 4.86 $\frac{1}{8}$, 4.86 $\frac{1}{4}$, and so on. There is a tendency to quote in $\frac{1}{20}$ of a cent, on a decimal scale, instead of by the orthodox progression. On £10,000 a change of $\frac{1}{8}$ of a cent in the rate makes a difference of \$12.50. A change of $\frac{1}{20}$ of a cent, as from 4.8605 to 4.8610 makes a difference of \$5 on the same (£10,000). For the period of the war the rate was arbitrarily "pegged" at 4.76 $\frac{7}{16}$, by agreement of England, France and the United States. When

the peg was removed on March 20, 1919, the rate fell till it reached \$3.20 on February 4, 1920. A normal daily fluctuation was 15 points, or \$15 on £10,000.

The rate of exchange on Paris used to be quoted in the form of the number of francs that could be purchased with an American dollar. At New York a quotation of 5.18 $\frac{1}{8}$ meant that five francs and 18 $\frac{1}{8}$ centimes could be purchased for a dollar. The system has been changed, however, and the franc is now quoted in what it is worth in American money, as so many cents, mills, tenths of a mill, and fraction thereof.

Before the war the rate of exchange on Berlin was in so many American cents for four Reichsmarks, or "marks" as they are commonly called. They are now quoted, however, on the basis of their value in American money, and since German currency has become inordinately inflated, the mark has fallen below one cent in value at the time this is being written. It is generally felt that as in the case of the assignats following the French Revolution, the mark will disappear, its place being taken by some other unit of currency that will be exchangeable for the then existing marks at a rate so high that the latter will have little value at all.

Exchange and the balance of trade.—The rate of exchange, in normal times, is determined by the balance of trade, within the limits fixed by the cost of shipping gold. Theoretically, the balance of trade, in turn, responds to the influence of the rates of exchange. As the rate of exchange increases, buying from abroad tends to decline. Exports accordingly fall off, and the demand for exchange is lessened, decreasing the rate. The rate tends

to fall until the point is reached where it will be profitable for foreign countries to resume buying, whereupon buying increases and the rate of exchange moves upward.

It is essential, in normal times, that the movement of gold shall not be restricted, for in such a case the rates may rise to a prohibitive point, as in the case of exchange on Spain.

Arbitraging.—From the foregoing it will be seen that the rates of exchange on each country with respect to any other country are continually changing with the changes in the balance of trade. Under normal conditions, there are two influences affecting the rates of exchange—the shifting trade-balances, tending to disturb the equilibrium of the rates; and the traffic in exchange, tending to equalize the rates. By equalization of the rates, we do not mean, of course, a bringing about of uniformity in the rates, but only consistency. For example, if the position of A, with reference to its rates of exchange, is unfavorable with respect to B, its position tends to become equally unfavorable with respect to the other countries, C, D and E.

Now the rates between the “gold points” are determined ultimately by the general balance of trade, but more immediately by the corresponding balance of exchange, which is adjusted largely by means of transfers of money, or credit, through the mails. Pending this adjustment, there is a discrepancy in the rates prevailing between the different countries.¹

¹ This adjustment, of course, represents merely the composite result of past conditions. Later conditions compel new adjustments, so that with respect to conditions at any given time, there is only a “tendency” toward adjustment.

Since money payable at a given place may be purchased, at any given time, more cheaply at some one place than elsewhere, there is an opportunity for an alert dealer in exchange to purchase the cheaper money, by cable, and sell it where the price is higher. This process is called "arbitraging." The arbitrageur need not limit his series-transaction to the "triangle" formed by his own city, the city where money is bought, and the city where the money is sold—that is, paid. He may, for example, see a profit in buying exchange on Italy, converting that into exchange on Spain, and that into exchange on London, and that, finally, into exchange on Paris. Each such transaction, of course, hastens the equalization of the rates as between the various countries involved.

The arbitrageur is not a speculator—he merely takes immediate advantage of an existing and known state of the market. Such facilities as the arbitrageur possesses are not to be had by everyone; an elaborate mechanism must be maintained for carrying on such transactions.

Dealers in foreign exchange.—Obviously, those who deal in exchange do so in order that they may make a profit. It would seem that there are three ways in which a profit can be made: (1) in the charge for services rendered to those who have payments to make; (2) in arbitraging, as described above; and (3) in anticipating a rise in the price of exchange. The latter is speculation.

The dealers in exchange are of three general classes: (1) bankers who actually receive and transmit exchange as between the different financial centers; (2) local dealers, who buy bills of exchange and sell them to foreign exchange bankers; and (3) brokers, who receive

merely a commission for bringing buyers and sellers together.¹

Operations in foreign exchange.—In addition to arbitraging (which was described above, in order that an outline of the conditions affecting rates of exchange might at the same time be given), the operations typical of transactions in foreign exchange would include the following:²

1. Demand against demand. The simplest form of dealing in exchange is illustrated when the banker buys demand bills at a given price and sells his own demand drafts against them at a higher price. The banker may have a client whose credit he knows to be perfectly good, but the market value of whose credit is less than that of the banker's own credit. The banker, accordingly, buys his client's credit and sells his own, making as his profit the difference in the market values, for his client's credit, in the form of a sight draft, will answer for the replenishing of the banker's credit balance abroad fully as well as would his own draft.

2. Cables against demand. A similar transaction is the selling of cables against demand drafts. The banker may have an adequate balance abroad, and can replenish it to the extent to which the cable depletes it by sending thither the client's demand draft, which he has purchased for a price less than that for which he has sold his own "cable."

3. Demand against long bills. A third kind of transaction is the selling of a demand draft against a commer-

¹ Brown, *International Trade and Exchange*.

² See Franklin Escher, *Elements of Foreign Exchange*.

cial long bill. This may be a speculative transaction, the banker taking a chance on a rise in the rate of exchange by the time the bill matures and is paid to his credit abroad; or he may ascertain the discount rate on such a bill "to arrive" by a certain steamer, and instruct that the bill be discounted immediately upon its arrival and the proceeds put to his credit. Whether or not it will pay the banker to sell his own demand draft will then appear from the price he can get for a demand draft, on the one hand, and from the net proceeds of the long bill, on the other hand.

4. Foreign loans. When interest rates are higher in one country than in another, capital for investment moves to the country where the higher rates prevail. The transfer is accomplished by means of foreign exchange. There may be also a seasonal demand for short-term loans, as well as a more permanent demand for investment loans.

The banker in a city where capital is seeking investment, when he observes the rise in interest rates elsewhere, may cable his correspondent at such a place to draw upon him at 60 or 90 days' sight for a stated sum and invest the proceeds of the sale of the draft in specified securities or classes of securities. He may take this action either upon the direct instructions of clients who desire investments, or may do so upon his own initiative, in the expectation of selling the securities so purchased abroad by the time his draft matures.

5. The last of our so-called typical operations in foreign exchange (arbitraging being considered in a previous section) is the drawing of finance bills. A finance bill, as defined by Franklin Escher in his "Elements of For-

eign Exchange," is "a long draft drawn by a banker of one country on a banker in another, sometimes secured by collateral, but more often not, and issued by the drawing banker for the purpose of raising money." Such bills, Mr. Escher points out, are not always distinguishable, superficially, from the bills drawn for the financing of imports and exports, but essentially they are different, for they are undoubtedly of a speculative nature. Whether or not any collateral is put up, the whole purpose of the drawing of finance bills is to provide an easy way of raising money without borrowing from another local bank. The drawer of the finance bill, always a banker in excellent standing both in his own city and abroad, arranges with a foreign bank to "accept" his drafts up to a certain amount. Usually no additional collateral is required, for such an arrangement will be made only with a banker whose credit is good. The borrowing banker may, for example, foresee a decline in the rate of exchange on the place against which he proposes to draw his finance bill, due to expected crop movements or other export factors. By drawing bills at ninety days and "covering" when the decline comes, he may make such a profit as amounts to the same thing as his having had the free use of the borrowed money for the ninety days. The customary minimum amount of such a loan is £10,000, and when a number of finance bills are drawn at about the same time, they may depress the rate of exchange, whereas a fairly high rate must be realized if the loan is to be profitable.

When the loans are to be repaid, "cover" paper may be difficult to secure, for the holders of suitable cover paper

may take advantage of the situation and ask a very high price for their bills. A safe practice, when a finance bill is drawn, is to buy cover paper for future delivery.

Exchange on silver-standard countries.—Most of the world is on a gold monetary basis, but China and a few other Eastern countries are on a silver basis. China is the only one of importance.

The rate of exchange between a gold-standard country and a silver-standard country is complicated by the fact that it is not determined by supply and demand alone, but also by the relative values of gold and silver. If an investor lends money in a silver-standard country, he lends gold in an amount measured by the price of silver. If by the time his loan matures the price of silver has fallen, he will receive in repayment less gold than he lent, because he is repaid in the standard money of the borrower's country, converted into the monetary unit of his own country.

The difficulty and uncertainty incident to a double monetary standard in foreign exchange has forced practically the entire world, with the exception of the East, to adopt the gold standard. Even most of the Latin-American countries are nominally on a gold basis, but the lack of actual convertibility of their currency into the gold in which it is nominally redeemable causes great increases in their rates of exchange. Currency issued against gold but which cannot actually be redeemed in gold differs but little from fiat money.

Sterling exchange and dollar credits.—Sterling exchange has become the world's currency, directly because of the exchange facilities afforded by London, with cor-

respondent banks in the remotest corners of the earth. The facilities themselves, of course, are the consequence of the extension of British trade. It would, obviously, be impossible for a country to maintain exchange facilities without traffic in goods. The Federal Reserve system with its foreign branches furnishes facilities for transacting exchange in terms of United States dollars. The following countries have been designated as those from which member banks may accept drafts for the purpose of furnishing dollar exchange: Argentina, Bolivia, Brazil, British Guiana, British Honduras, Chile, Colombia, Costa Rica, Cuba, Dutch Guiana, Ecuador, French Guiana, Guatemala, Honduras, Nicaragua, Panama, Paraguay, Peru, Porto Rico, San Salvador, Santo Domingo, Trinidad, Uruguay, Venezuela, Australia, New Zealand, and other Australasian dependencies.

Other things being equal, the preference for one form of money over another is largely a matter of habit. Gold has always been the preferred currency on the Pacific Coast, silver in the Southwest, and paper money in the East. The world has, undeniably, acquired the habit of transacting its international business in sterling. The psychological factors will favor the retention of sterling, until a positive advantage is seen in the use of the dollar. Such an advantage, if it is to materialize, will be principally in the stability of the dollar, the cost of the dollar, and the facilities for payment in the dollar.

It would seem, in a way, that there would be a disadvantage in having two kinds of money in circulation at the same place and at the same time. If they exchanged at different rates, inconvenience would result; if they ex-

changed at the same rate, neither would have the advantage—they would be, to all purposes, the same form of money. One of the prime requisites of money, as the universal medium of exchange, is certainty as to its value. Two currencies in world commerce, although each were based on gold, would be somewhat the same as a double standard in an individual country. It will be difficult, apparently, for two forms of exchange-currency to exist side by side. It would seem that sterling must maintain its supremacy, or else be displaced by the dollar.

Regardless, however, of the competition between the dollar and other measures of value in exchange, the use of dollar credits will be economical in transactions of countries direct with the United States. If suitable exchange facilities, widely enough distributed, are provided by the Federal Reserve system for the discount of bills drawn upon the United States, the conversion of the credits involved can be accomplished more economically than through the intermediation of a third party at a distance.

The price of goods, of course, must continue to be regulated by the action of supply and demand. If price-fixing should be extended on a scale not heretofore contemplated even under emergency conditions, such a price-fixing would be no more than an interpretation of economic laws. There is, however, no fundamental justification for variations in the "value" of money. The variations do not reflect the prices of goods directly, but only indirectly, in so far as the demand for goods increases the demand for a medium of exchange with which to pay for the goods. There is no fundamental reason

why money should not exchange at par throughout the world, as it is intended to do throughout the United States under the Federal Reserve system. The cost of transferring funds, in other words, is an economic waste, since funds could be transported, under an efficient credit-system, at practically no cost at all.

A world credit-exchange, maintained by the several governments, would probably eliminate the cost of exchanging money—the more probably if the nations were to agree upon what has often been proposed—a common monetary system, or standardized coinage. The “Britishers,” of course, would be reluctant to give up their pounds, shillings and pence, to say nothing of their crowns, guineas, and sovereigns. The French would be slow to part with their francs. Naturally, we of the United States may feel that in the event of the adoption of a common monetary unit we should not be required to surrender anything that was dear to us, for surely no better unit than the U. S. dollar could be devised, to serve as the standard of the world’s currency.

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PRINCIPLES OF ACCOUNTING

What is accounting?—Accounting has been defined as “the science dealing with the recording, verification, and presentation of facts, involving the acquisition, production, conservation and transfer of values.”¹ In a word, it is the science of analyzing and recording business transactions in such a manner as to furnish the greatest amount of information about each transaction, in particular, and the business as a unit, in general.

Uses of accounting.—Accounting records invariably form the basis for important decisions in the financing and general conduct of an enterprise.

In a business enterprise of any size it is usually found that the co-owners or investors are divided into classes, each of which assumes a different degree of risk and has a different degree of priority or right to the income earned by the enterprise, the legal rights of each class depending upon the agreement made. Justice cannot be done to all classes except through accurate accounting.

Government regulation of business, likewise, with respect to its equitableness and success, is dependent upon accounting.

In the case of the combinations of corporations by means of mergers, consolidations or holding companies, accounting plays an important part. While the distribution of securities is largely a matter of bar-

¹*Certified Public Accountant Syllabus*, issued by the New York State Department of Education.

gaining and financial adjustments, it is nevertheless true that the promoter and other parties interested have no sound basis for conducting negotiations unless there is available a statement of the present condition and of the past and present earnings of the component companies.

Development of accounting.—In ancient times, accounting served primarily merely to record the obligation of one person to another. The Babylonian, for example, was satisfied to discard his records after he had made collection of whatever was due him. Beyond that, he found that records were unnecessary, since his business dealings were limited and since he had little difficulty in remembering all the facts having to do with his commercial dealings. In fact, until recently, the business man looked upon the keeping of records as an unnecessary trouble and expense. He was satisfied, for example, to know that the business had shown an apparent profit of so many dollars at the end of the year, and depending upon whether or not this amount of profit was satisfactory, he would decide to take his profits and reduce the scale of his operations, or else to leave the profits in the business and take another chance on the future. Today, however, the whole problem is different. With the advent of the large and complicated modern business enterprise, there is still the elementary need for data to serve as evidences of rights and obligations, but more important is the need for a complete general plan of record-keeping and classification of information by means of which all the activities of the business may be intelligently controlled. The executive can no longer hope to supervise the detailed operation of a business of any consider-

able size. He must deal only with the fundamentals. He must have a comprehensive view of the organization, so that he may detect the weaknesses and plan to remove them. It is through accounting records that this is made possible. The three important steps in the improvement of the organization are, accordingly: first, the designing of a system that permits of gathering the necessary information; second, the accurate recording of this information; and, finally, the proper interpretation of facts on which conclusions and plans for improvement may be based.

BOOKKEEPING PRINCIPLES

Bookkeeping principles.—The analysis of business transactions is not serviceable unless the results of the analysis are properly recorded in an intelligent form. The process of recording business transactions is called bookkeeping. The prevalent double-entry system of bookkeeping is based upon the equation:

$$\text{Goods Owned} = \text{Proprietorship.}$$

Expressed in accounting terms, the equation would be:

$$\text{Assets} = \text{Proprietorship.}$$

But this equation is true only if one owes nothing. Otherwise, the equation should be:

$$\text{Assets} - \text{Liabilities} = \text{Proprietorship.}$$

In bookkeeping, the equation would be changed to:

$$\text{Assets} = \text{Liabilities} + \text{Proprietorship.}$$

This equation holds true for every double-entry set of books at all times. For convenience, the items to the left of the equation are called debits; those to the right, credits. If John Smith were to start business with \$100 in cash the opening would be:

Dr. Cash \$100 = Cr. John Smith, Proprietor \$100

Now subsequent transactions in cash would be entered under the cash account. If John Smith uses \$50 to purchase merchandise, his cash would be reduced by \$50, but he would have another asset called merchandise.¹ The transaction would be entered as follows:

Dr. Merchandise \$50 = Cr. Cash \$50.

The effect of crediting cash \$50 is the same as subtracting \$50 from the debit. In bookkeeping, then, if it is desired to reduce the amount standing on one side of the equation, the amount should be entered on the opposite side. Thus, we had \$100 cash on the debit side of the equation, which we desired to reduce by \$50. This was done by crediting cash \$50.

If \$25 of the merchandise is sold to Will Brown for \$35 on 30 days' time, the asset "merchandise" will have been decreased \$25, but this decrease is offset by the acquisition of a new asset—the claim against Will Brown for \$35. The asset received is \$10 greater than that given up; it is evident, therefore, that the proprietorship has been increased by \$10. The transaction would be entered as follows:

Dr. Will Brown \$35 = $\begin{cases} \text{Cr. Merchandise } \$25. \\ \text{Cr. John Smith, Proprietor } \$10. \end{cases}$

Now let us assume that John Smith pays out \$5 for the wages of a clerk. As he has received no asset in exchange for the \$5, we must infer that his proprietorship

¹ The rule in bookkeeping is that when an asset is increased, debit the asset account by that amount, and conversely when it is decreased credit the account. Likewise when a liability is increased, the liability account should be credited, and when decreased it should be debited.

has been decreased by the amount of \$5. The proper entry would be:

Dr. John Smith, Proprietor \$5 = Cr. Cash, \$5

If we now group all the transactions affecting each asset, the result of the debits and credits will be as follows:

| <i>Assets</i> | |
|-------------------|-------|
| Cash | \$ 45 |
| Merchandise | 25 |
| Will Brown..... | 35 |
| | <hr/> |

Total Assets..... \$105 = Proprietorship \$105

By grouping all the transactions affecting a given asset, we create an account. Thus the cash account containing the preceding transactions would look like this:

| | | | | |
|-----------------|--------------|---|-------------------|----------------|
| | Cash | | | |
| Investment..... | \$100 | — | Merchandise | \$ 50 — |
| | | | Wages | 5 — |
| | | | Balance | 45 — |
| | | | | |
| Total | <u>\$100</u> | — | Total | <u>\$100</u> — |
| | | | | |
| Balance | \$ 45 | — | | |

This procedure—of entering the changes in proprietorship in the proprietor's account—could be followed indefinitely, and the proprietor's account would always show the difference between the assets owned and the liabilities owed. As the business increased it would become difficult to determine how much of the sales receipts for merchandise represented cost and how much was profit. It is also evident that if all transactions resulting in an increase or decrease of proprietorship are reflected in the proprietor's account it would be difficult to decide at the end of the period the extent to which each

cause contributed to the net increase or decrease of proprietorship. To save this confusion and to furnish additional information we change our method of entering transactions so that instead of crediting or debiting proprietorship with each change, we credit or debit accounts whose titles indicate the causes of the increases or decreases. Thus, when \$5 is spent for wages the entry would be:

| | | | |
|-----------|-----|----------|-----|
| Dr. Wages | \$5 | Cr. Cash | \$5 |
|-----------|-----|----------|-----|

This entry would show that because of paying wages the proprietorship was reduced \$5. On the other hand, if \$5 was received for interest, the entry would be:

| | | | |
|----------|-----|--------------|-----|
| Dr. Cash | \$5 | Cr. Interest | \$5 |
|----------|-----|--------------|-----|

This indicates that the proprietorship had been increased by the amount of interest received.

At the close of each fiscal period (which may be a month, half-year or year) nominal accounts—that is, all the accounts, such as rent, interest, wages, or taxes, reflecting a change in the financial condition of proprietorship of the business, are transferred to another account called the “profit and loss account.” This account then contains a summary of the causes of the changes in proprietorship and from this account the net increase or decrease is transferred or “closed out” to the “proprietorship” account. The transferring of the nominal accounts to the profit and loss account and finally to the proprietorship account is called “closing the books.” After the books have been “closed” the only accounts open are the real accounts consisting of the assets, the liabilities and the proprietorship—that is, the accounts which show the financial condition of the business.

The merchandise account.—As indicated above, it is often impracticable to determine at the time of the sale the profit on each sale of merchandise. In such cases the sales are entered as if the entire sales price represented cost. Thus a cash sale of merchandise for \$35 would be entered:

Dr. Cash \$35 Cr. Merchandise \$35

If the original purchases amounted to \$100 the merchandise account would appear as follows:

Merchandise Account

Purchases \$100 | Sales \$35

This would indicate that we should have on hand merchandise amounting to \$65. This condition would exist only if the merchandise sold for \$35 had cost exactly that amount. Before we can determine whether or not we have made a profit on the sale, an inventory must be taken to find out how much merchandise is on hand. Until such an inventory is taken and entered upon the books the merchandise account is not a real account, because it does not indicate the possession of \$65 worth of merchandise, nor is it a nominal account, because it does not mean that the capital has been reduced by \$65. It is a mixed account, and is meaningless until the inventory is entered in the account. If the inventory amounted to \$75 the merchandise account would then be "closed out" as follows:

| Merchandise Account | | | |
|---|-------|-----------------|-------|
| Purchases | \$100 | Sales | \$35 |
| Profit on sales Transferred to Profit and Loss..... | 10 | Inventory | 75 |
| | \$110 | | \$110 |
| Inventory | \$75 | | |

The account shows a profit of \$10, which would be transferred to the profit and loss account.

The inventory of merchandise unsold appears as a debit after the account has been closed, for the account is now a real account and the debit balance represents an asset.

The successful business man desires more information than a mere statement of his profit on merchandise; he wants to know the amount of his sales, sales returns, purchases and purchase returns; and for comparison with other periods he wants this information available at all times, and not merely at the end of the accounting period. For this reason, it has become the practice to separate the merchandise account into a number of accounts, each account covering one phase of the transactions in merchandise. The usual division of accounts is: sales, sales returns, sales allowances, purchases, purchase returns, etc. At the close of the accounting period these accounts are closed out into a merchandise trading account and the profit on merchandise determined.

Financial statements.—After the books are closed, two financial statements are prepared. The first—the “balance sheet”—is merely an arrangement of the assets and liabilities upon the books; the second—the statement of “income, profit and loss”—is a rearrangement of the profit and loss account. The balance sheet shows the financial condition of the business at a given date, while the income statement summarizes the transactions of the preceding fiscal period, accounting for the change in the financial condition of the business. The form, analysis and interpretation of these statements are discussed in the chapter on “Financial Statements”

Books of original entry.—Obviously, the first thing to do with a business transaction is to make a record of it in such detail that it will always be self-explanatory. The old-fashioned day book was a book designed for the chronological entry of business transactions. An entry in the day book would read:

JANUARY 1
Sold John Smith on a/c
2 Bbls. Apples @ \$5.00 \$10.00
JANUARY 2nd
Bought of A. B. & Co. on a/c
200 Bushels Potatoes @ \$1.10 \$220.00

From this day book the transactions were "posted" to the ledger, in which the accounts were classified. It was found that in involved transactions there was a great opportunity for error, because the accounts to which the postings were to be made were not indicated in the day book. This difficulty has been overcome through the use of a journal, an auxiliary to the day book, although sometimes combined with the day book in the form of a journal day book, in which are recorded the data for posting the elements of each transaction. The transactions illustrated above would be entered in the journal as follows:

| | | | | | | | |
|------|---|-------------------|-----|---|--|-----|---|
| Jan. | 1 | John Smith..... | 10 | — | | 10 | — |
| | | Merchandise | | | | | |
| Jan. | 2 | Merchandise | 220 | — | | 220 | — |
| | | A. B. & Co..... | | | | | |

The left-hand column is used to indicate debits, the right to indicate credits, while the blank column after the date is used to enter the ledger page to which the item has been posted.

Where the day book is combined with the journal the

journal entry is made first, followed by the explanation, as illustrated:

| JANUARY 1 | | |
|------------------------------|------|------|
| John Smith..... | \$10 | |
| Merchandise | | \$10 |
| Sold John Smith on a/c | | |
| 2 Bbls. Apples @ \$5 | | |
| — 2 — | | |
| Merchandise | 220 | |
| A. B. & Co..... | | 220 |
| Bought of A. B. & Co. on a/c | | |
| 200 Bu. Potatoes @ \$1.10 | | |

The day-book journal method of entering transactions meant that for each entry there would be two or more postings. It was at once seen that certain accounts were affected more often than others, and it was therefore decided to enter the transactions having to do with the more important accounts in separate books.

Probably the first class of transactions to be entered in a separate book were those having to do with cash. The cash book is usually divided into two sides, the left, used for cash receipts, and the right, used for cash disbursements. Instead of posting each item of cash received to the cash account, one posting is made at the end of the month of the total cash received during the month, and a similar posting is made of the total cash disbursed.

Gradually, other transactions were grouped together in special books, such as sales, purchases, sales returns, and purchase returns. Thus all entries in the sales book would be posted to the debit of the customer's account, while the total sales would be posted to the credit of merchandise.

When the demand for information made it necessary to find the sales in each of several lines or departments, it

was found that the information could be obtained by inserting additional columns in the sales book. Thus, if the amount of sales in each of four departments was wanted, the sales book would be provided with five columns, the first for the total sales, the others for the four departments. Each sale is entered in the total column and then in the proper departmental column. This principle of columnarization may be extended almost indefinitely to provide any variety of statistical information.

What an accounting system is.—Modern accounting has developed other forms of books or original entry, each one designed to furnish certain information. The entire group of books of a business, including books of original entry, ledgers, and subsidiary records, such as receiving and shipping records, is called its accounting system.

Every accounting system should have internal checks, that is, the system should be so designed that no part of the accounts will be under the absolute and independent control of any one person; that, on the contrary, the work of one employee will be complementary to another, that safeguards will be thrown about the handling of all moneys, particularly with regard to such transactions as cash sales, payrolls, freights, and the like; that the method of handling and recording incoming and outgoing goods, especially the latter, will be such as to insure that all goods paid for are actually received, and that charges are made to customers for all goods shipped.¹

The ledger and the trial balance.—As previously ex-

¹ R. H. Montgomery, *Auditing*, p. 83.

The creditors' controlling account—or "accounts payable," as it is often called—is operated in the same manner. Controlling accounts are often kept for other items, such as investments, capital stock, notes receivable, and notes payable. Under modern cost systems, as described in the chapter on "Cost Accounting," controlling accounts are kept for materials, work in process and finished goods.

Single-entry bookkeeping.—Where no attempt is made to maintain the primary equation of double-entry bookkeeping, i.e., assets=liabilities and capital, the system of bookkeeping is known as "single entry." In its simplest form, single-entry bookkeeping consists merely of keeping accounts with debtors and creditors; although, in actual practice, an account with "cash" is also kept. Single-entry books, of themselves, do not show either the financial condition of the business or the cause of the changes in the condition. The financial condition of the business can be found only by taking an actual inventory of all physical assets, such as merchandise or real estate, and taking these figures in conjunction with the assets and liabilities shown on the books and setting up a statement of assets and liabilities. The profit for any given period is the difference between the net worth at the beginning and that at the end of the period, plus the amount withdrawn by the proprietor. Thus, if at the end of 1918 the statement of assets and liabilities shows a net worth of \$10,000 as compared with \$8,000 at the beginning of the year, and if the proprietor has drawn \$2,000 during the year, the profit for the period would be \$4,000. The reason that single-entry bookkeeping has

been supplanted by double entry is not that it does not show the true financial condition of the business; for, as pointed out, double-entry books do not do this except at inventory time. It is possible, of course, that by not having a record of all the assets, there is a possibility of the omission of some of the assets. This chance of error is offset by the increased accuracy of the physical inventory of all assets. Nor can we say that the profit for the period cannot be determined; for if the proprietorship at the beginning and end of the period is correctly stated, the determination of the profit or loss is merely a matter of subtraction. The defect of the single-entry system which causes its condemnation by accountants is that it does not show the *causes* of the changes in the financial condition of the business.

ACCOUNTING PRINCIPLES

The distinction between capital and revenue.—Real accounts have been defined as those accounts which reflect the financial condition of the business; nominal accounts, as those accounts which reflect the changes in the financial condition. Every transaction involving the disbursing of cash or the incurring of liabilities should be carefully examined as to whether or not a corresponding asset has been received. If we spend \$1,000 to purchase a machine we have obviously received an equivalent asset, which we charge to a real or capital account called machinery. On the other hand, if we contribute \$1,000 to the Red Cross, it is equally clear that we have not received any equivalent asset. We therefore charge a nominal or revenue account, as "donations and charities."

Not every transaction is so clear that we can decide definitely whether the charge should be to capital, or to revenue. As a matter of fact, nothing can be valued with permanent certainty. Even the machinery, which we decided was an asset worth \$1,000, will require an adjustment in value at the end of the year because of depreciation. It might be argued that if adjustments must be made at the end of each year it is not worth the trouble of attempting to distinguish between capital and revenue as each entry is made. But the more carefully this distinction is made each day, the less will be the labor of adjustment at the close of each period, and the more complete the information furnished by the books in the intervening periods. The best practice to follow, then, is to charge to capital whatever is expected to exist as an asset at the end of the current earning period, and to charge to expense whatever is expected to be consumed during the earning period.

But what constitutes an asset? Suppose that we own a building containing several stores, and a prospective tenant offers to rent one of the stores if we will take out the windows and replace them with others more suitable to his business, which we do at a cost of \$150. Are we justified in charging this \$150 to an asset account, "real estate," on the ground that the property is improved? If after a year this tenant moves and in order to secure a new tenant we replace the old windows at a cost of \$100, are we justified in charging this as an asset to "real estate" again? It is evident that if we charged all these items to "real estate" and continued the practice the real estate account would be increased without any increase in

the value of the property. These items are expenses, and should be charged against revenue.

Or to take the case of a factory, may we capitalize the cost of removing a machine from one building to another, to permit of more economical operation?

It is evident that while the decision must depend upon the circumstances of the particular case, there is need for a general rule to guide us. Perhaps the best rule is that in so far as the transaction results in an addition of substantial and permanent character which increases the value of the plant, such an increase is a capital expense.¹ While this view is the one adopted by the majority of accountants, other rules have been laid down by engineers and the courts. An extremely conservative view is that taken by T. F. Woodstock in an article in the *Engineering Magazine*² that "an addition which does not increase revenue or diminish expenditures is not a proper charge against capital according to the best modern practice in railroads. That which simply tends to hold business and not to increase business is a proper charge against operating expenses."

Another rule, which happily is not followed by accountants in this country, laid down by the court in *Cox vs. Edinburgh and District Tramways Company, Ltd.* (6 S. L. T. 63), is that where an improvement is made in the plant even though it be in the nature of a substitution of new plant for old, the entire cost of the new plant, and not merely the excess in value of the new over the old, may be capitalized and charged to construction account.

¹ *MacKintosh vs. Flint & Pere Marquette Ry.* 34 Fed. Rep. 60.

² Vol. XI, p. 241.

Testing our hypothetical cases by the first rule, we should capitalize the excess in value of the new windows over the old; we should not capitalize the cost of removing the new windows nor should we capitalize the cost of removing the machines from one building to another.

Deferred charges to expense.—In addition to our original classification of accounts as real and nominal accounts, we have a group of accounts which are nominal in their nature, but the charging of which to expense is deferred for accounting reasons. These accounts are called “deferred charges to expense.” We may use the case of a quarry to illustrate. Preparatory to getting out rock it is necessary to remove the loose earth or “top,” and for convenience the “top” is removed from the entire field before excavating is begun. Let us assume that the top is removed from a particular bed which is expected to last three years. At the end of the first year how should the cost of removing tops appear on the books? Obviously, it is an expense—a cost of obtaining revenue—and should ultimately be charged to revenue. Yet two-thirds of the cost will benefit future periods. At the end of the first year two-thirds of the cost may be counted as an asset, whereas the remaining third should appear as an expense of production for that year.

Other common examples of deferred charges to expense are organization expense, discount on bonds, prepaid rent, insurance and the like, all of which are discussed in the chapter on “Financial Statements.”

The important principle in connection with these charges is that they should appear as assets only so long as they represent some definite benefit available for future

periods and that they should be charged against the revenue of the different periods upon an equitable basis.

The anticipation of income.—One of the tendencies of the business man, which it is difficult to curb, is that of anticipating profits, of “counting his chickens before they are hatched.” Sometimes he will anticipate profits by inventorying finished goods at sales price and raw material at market price, when such market price is greater than cost, and including among his profits, estimated gains on uncompleted contracts.

Conservative accounting, however, is opposed to these practices; its rule is that due provision must be made for all possible losses, while profits shall not be considered as earned until definitely realized. Hence merchandise should be valued at cost, except in those cases where the market value is less than cost. In such cases the market value should be used and profits on sales should not be considered as realized until the sale is completed. The practice of shipping merchandise on consignment, “on sale and approval,” or to branch houses and including the shipments among the bona-fide sales is fundamentally unsound. Such shipments should be credited to accounts indicating the nature of the shipment, and at the close of the period the amount of merchandise outstanding with consignees and branches should be added to the inventory at cost (at market value if the latter is lower) less in some cases an allowance for spoilage or damage in handling. Only the goods actually sold should be treated as sales.

An exception to the rule that profits should not be considered earned until definitely realized may be in the case of contracts covering a period of several years. If the

cost of the contract has been estimated in detail, and the actual cost of the completed portion does not exceed its estimated cost, it is proper to consider as income such portion of the estimated profits as the portion completed bears to the entire contract.

Valuation of assets.—The bases of valuation of the various assets are discussed at length in the chapter on "Financial Statements." At this point, however, it may be well to point out the important difference between the methods of valuing current and fixed assets, respectively.

Fixed assets are those assets which are necessary to the maintenance of the business. They are not to be sold in this ordinary course of business and therefore all fluctuations in their market value should be ignored. They should be valued at cost less depreciation.

Current assets, on the other hand, are those assets which will be disposed of in the ordinary course of business. The market value should be the basis of valuation, providing that an enhanced market value is not used to anticipate profits.

Closely allied to the problem of valuation is that of depreciation.

Depreciation.—The actual cash expended and the actual liabilities incurred in the operation of a factory are only the apparent costs of producing its product. From year to year the machinery and the plant itself are continually wearing out, even though the fact may not be superficially apparent. A machine cannot last forever, and when it wears out it must be replaced, if the business is to continue. The cost of replacing the machine cannot be charged to capital, because we have no more assets

after the machine has been replaced than we had originally. On the other hand, we cannot very well charge the cost to the period in which the machine is replaced. The wearing-out of the old machine has not occurred entirely within that period. Previous periods have had the benefit of the use of the machine and proper accounting requires that these periods be charged with part of the loss in value of the machine.

The wearing-out of the machine is called depreciation. It is difficult for us to say of a machine costing \$1,000 that after one year of operation it is worth only \$900. The machine is working as well as or even more efficiently than when it was purchased. It may be worth even more than was paid for it. Yet, from our past experience we are almost certain that at the end of ten years of operation the machine will have to be scrapped. We know that in the course of ten years we shall have incurred a loss of \$1,000, but we cannot decide definitely how much of that loss will occur each year. We may estimate the amount of depreciation chargeable to each year's income upon any one of the bases described later in this chapter. At the end of each period, then, we will charge or debit a nominal account called "depreciation," or "reserve for depreciation," and credit, not the asset which is depreciating, but an account called "reserve for depreciation."

The asset account is not credited because the depreciation charge does not represent a definite loss in value, and also because it is desired to keep the original cost upon the books as a matter of record.

At the end of ten years the machine will have to be replaced. The cost of the new machine, up to \$1,000,

will be charged neither to capital nor to revenue, but will be charged against the depreciation reserve, which should by that time amount to \$1,000 less the scrap value of the machine, if it has any scrap value.

Depreciation and repairs.—Depreciation takes place even if the property is kept in repair. As Hatfield says, "All machinery is on an irresistible march to the junk heap, and its progress, while it may be delayed, cannot be prevented by repairs."¹ The rate of depreciation should always be calculated on the assumption that the property will be kept in repair.

It would be possible to replace a machine, or plant, part by part, so that at the end of the estimated life of the property it would be in its original condition. Replacements of parts of machines and parts of plants should not be charged to operations but should be charged to the depreciation reserve account. Where the replacement cost exceeds the original cost, such excess may be charged to the machinery account. If these renewals and replacements were included with the ordinary repairs, at the end of the estimated life of the asset we should find that we had a property account representing a perfectly good plant offset by an unnecessary reserve account. We should be charging revenue twice—once with the depreciation charge and again with the cost of replacing the asset.

Obsolescence.—Accounting authorities include obsolescence as one of the causes of depreciation, and contend that the possibility of property's becoming obsolete should be considered in determining the amount of depre-

¹ Henry R. Hatfield, *Modern Accounting*, p. 121.

ciation. Machinery becomes out-of-date and inefficient more quickly in some lines than others, largely by reason of the invention of improved machines. In the electrical-equipment business it is not unusual to find a machine which could have lasted ten years replaced by a more up-to-date machine at the end of two or three years. The reason for replacing the machine is not that it is worn out, but that because of a new invention it has been made almost valueless.

If the charge for depreciation does not include an allowance for obsolescence, and obsolescence does occur as in the illustration above, the question arises as to the method of disposing of the resulting loss. If the machine cost \$1,000 and is disposed of for \$100, our loss, assuming that a reserve of \$200 for depreciation has been created, would be \$700 and this loss would have to be charged off in the current year.

Methods of calculating depreciation.—The purpose of creating a reserve for depreciation is to have set aside out of profits, at the expiration of the life of the asset, an amount equal to its decline in value. The amount to be set aside each year therefore depends upon the life of the asset. It is impossible to determine precisely the life of any asset, for its service-life depends upon a multitude of varying factors, such as the nature of asset, the use to which it is put, the care it receives, or the climatic conditions of the locality. To illustrate, a concrete building will last longer than a frame building. In parts of the Southwest, boilers have to be replaced five times as often as in New York, as a result of the deteriorating effect of the alkaline water. A plant operated twenty-four hours

a day may depreciate more than three times as fast as a plant running only eight hours a day.

The first step in calculating depreciation, therefore, is to estimate as accurately as possible the service-life of the asset, assuming, of course, that the asset will be kept in repair. Then the problem is to apportion the loss of value over the life of the asset. This may be done in one of several ways. The most used method is that known as the "fixed-percentage method," by which a fixed percentage of the wearing-value of the asset is charged off each year. For example, a machine costs \$1,500 and has an estimated service-life of ten years, and a scrap value of \$300. Each year, therefore, we depreciate the asset by \$120, or 10 per cent of \$1,200. This method has the important practical advantage of being simple and convenient, and has usually been found to be as satisfactory and accurate in practice as any other method. It is not surprising, then, that this method is the one which is the most generally used, and that it is the method which is favored by the Treasury Department for the computation of tax reports, and by the Interstate Commerce Commission for railway accounting.

A somewhat similar method is the so-called sinking-fund method. A fixed sum is set aside annually which with interest will at the end of the service-life of the asset equal the amount of depreciation. This method does not require so large a deduction as does the fixed-percentage method.

The objection to the use of either of these methods, however, is that they both result in increasing the cost of operating the asset each year. This cost consists of re-

pairs and depreciation, and as the cost of repairs is greatest during the latter part of the life, the cost of operating the asset obviously increases each year. To make the repairs plus depreciation a constant quantity, the amount of depreciation may be decreased annually. This is usually done by applying the "weighted-year" method. The amount of depreciation is determined for any year by multiplying the total depreciation by a fraction having as a numerator the number of years the asset will last, and as a denominator the sum of the total years of its life.¹ Applying this method to the machine above mentioned—the total depreciation is \$1,200, to be spread over ten years; therefore, the depreciation the first year is $10/55$ of \$1,200 or \$218.18. The second year the depreciation would be $9/55$ of \$1,200, or \$196.36, and the last year $1/55$ of \$1,200, or \$21.82.

The "declining balance unscientific method" is an unscientific attempt to overcome the objection to the fixed-percentage method² and to decrease the amount of depreciation annually. A fixed percentage, usually decided arbitrarily, is applied to the decreasing value of the asset, i.e., the first year the percentage is calculated on the original cost, the second year on the original cost less the first year's depreciation, the third year on the original cost less the depreciation for two years, etc. As the percentage is selected arbitrarily, it does not wipe out

¹ The formula for the sum of an arithmetical progression is $N(A + Z)$

2

N being the number of terms, A the first term and Z the last term. The sum of the numbers 1 to 15 would be $\frac{15(1 + 15)}{2} = 120$.

² This method is also commonly called the "straight-line" method.

the asset or reduce it to a desired residual value. If the percentage is accurately calculated so as to take up the full amount of the depreciation, the method is called the "declining balance scientific."¹

Some concerns, however, prefer to increase the depreciation charge each year, by reversing the methods already described. They hold that the actual depreciation is likely to be small during the early years and that the deduction for depreciation should be commensurate. From another standpoint, they argue the practicability of such a method on the ground that a new business cannot very well support a large charge for depreciation during its early years. Other concerns vary the depreciation charge approximately with the size of the current surplus. This they justify on the ground that a variation in the size of the surplus will reflect the variations in wear and tear. They forget, perhaps intentionally, that depreciation goes on even when the machine or building is not in use—and sometimes at a more rapid rate. The advantage of the method of calculating depreciation above described is that it tends to equalize the net income available for dividends, by increasing depreciation charges in good years and decreasing them in bad years, and for this reason many concerns have adopted it.

Another method of accomplishing practically the same result is by applying the "production-unit" method. The production-unit method is based upon the assumption that

¹ The formula for finding the required percentage to reduce the original value V to salvage value S through a period of years (n),

$$X \text{ being the rate to be calculated is: } X = 1 - \sqrt[n]{\frac{S}{V}}$$
 A salvage value of \$1 should be assumed if no scrap value exists.

the life of the asset should be expressed by the number of units it is capable of producing. Where this is possible, as in the case of blast furnaces, the cost of the asset should be divided by the estimated capacity in units, giving the depreciation charge per unit produced.

Depletion.—Depletion is the decrease or diminution of the supply of a natural deposit. It is evident that if we purchase a coal mine containing 100,000 tons of coal for \$50,000 we have paid 50 cents per ton for the coal in the mine. If, during the first year, we mine 10,000 tons, we must charge \$5,000 to the cost of production and reduce the value of the mine by the same amount. The bookkeeping entry is similar to that for depreciation, an appropriate nominal account being debited and "reserve for depletion" being credited.

The calculation of depletion on such natural deposits as oil, for example, is an exceedingly difficult matter. It may be possible to estimate the rate at which depletion is taking place by measuring the reduction in flow or pressure for comparative periods, if the well is a flowing one; or by estimating the rate at which the level is falling, in the case of a well which must be pumped. The difficulty arises, however, that market prices may change, making it profitable to continue pumping at a greater expense than has been contemplated, or it may be seen that the installation of improved pumping machinery would make it possible to continue operations at a profit, whereas with the old machinery the well would have to be abandoned and charged off as being totally exhausted. Some interesting taxation problems arise out of such a situation as that touched upon in the foregoing.

Funds.—It has been argued that unless an amount equal to the depreciation or depletion reserve is set aside in cash or marketable securities the reserve is not a true reserve. Nothing could be farther from the truth. By charging to income an amount sufficient to cover depreciation we have retained in the business profits that would otherwise have been distributed. This reserve is represented by any of the undivided assets of the business.

Under certain circumstances it may be advisable to create a fund equal to a certain reserve. Thus, if a corporation acts as its own insurer it will charge "income" and credit "reserve for insurance" with the amount of premium it would have to pay. To protect itself, it will then set aside a cash fund equal to the amount of reserve. So, too, if the purchase of property has been financed by the issuance of bonds, the mortgage indenture will often contain a provision that there shall be set aside in cash or securities a sum sufficient to pay off the bonds at maturity. The setting aside of cash for a definite purpose creates a fund. A fund may or may not have any connection with a reserve. In fact, the sinking-fund requirement in a mortgage may be met without making a charge against profits for depreciation and without creating a reserve for depreciation, unless the mortgage requires this to be done as an additional protection for the bondholders.

Because of the careless use of accounting terms the words "fund" and "reserve" have sometimes been confused. In some balance sheets an account will be found on the credit side called "depreciation fund." This should be labelled "depreciation reserve." A fund is an

asset, while a reserve is an accountability, and one may be created quite independently of the other. Whether or not the profits retained in the business because of a reserve should be invested in securities and set aside in a fund is always a matter of financial policy.

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FINANCIAL STATEMENTS

Old methods no longer satisfactory.—To the corner grocer of twenty years ago, determining his profit for the year was a simple proposition. He took down from their hook his unpaid bills and added them up; that much he owed; everything above that in the store was his. If the balance was more than the balance of the year before he was satisfied; if it was less, he blamed it on "poor crops."

The business man of today is not satisfied merely with knowing that he has made a profit; he wants to know where that profit came from—what his sales were—what his cost of doing business was—whether the percentage of profit this year was larger than the year before—if not, why not—and a hundred-and-one other facts about his business. He must have this information if he is to hold his own with his competitors. Indeed, with the growth of modern business and its increasing complexities, it has become indispensable that the executive have at his instant disposal a means of obtaining accurate information concerning the progress and condition of every department of the business.

The importance of financial statements in obtaining and granting credit.—At some time or other almost every business man is in need of credit. He will find it easier to obtain an adequate amount of credit if he furnishes his creditors with a statement accurately setting

forth the financial condition of his business. In fact, some creditors will refuse to extend any credit to him in the absence of such a statement; if he applies to his bank for a loan he will usually be asked to present a financial statement certified by a public accountant. Likewise, when the business man himself extends credit, he relies largely upon the financial statements of his customers. It is upon his ability to interpret these statements—to create, from the figures, a picture of the actual business—that the amount of his losses from bad debts depends.

The value to the investor.—The investor is saved from relying on market tips and rumors if he is able correctly to interpret the balance sheets and income statements of the corporation whose stock or bonds he owns or intends to purchase. It is from these same statements that he forms his judgment as to the value of the services rendered by his board of directors. These are some of the reasons why the New York Stock Exchange makes the furnishing of annual statements by the corporation one of the requirements for listing its securities on the Exchange.

Obligations to furnish financial statements.—Detailed financial statements are required by the Interstate Commerce Commission of all railroads engaged in interstate commerce, and are required by the various State commissions of all insurance and public-utility companies. The various Federal and State tax laws also require complete statements of all corporations, individuals or partnerships engaged in business, having net incomes in excess of certain specified exemptions.

The balance sheet.—The principal financial statement

is the balance sheet or, as it sometimes is called, the statement of assets and liabilities.¹

The primary purpose of the balance sheet is to set forth on one side the assets, on the other side the liabilities, the resulting balance being the net worth (sometimes called capital, present worth, or proprietorship) of the business.

Importance of proper construction of the balance sheet.—The modern balance sheet does more than merely to set forth the total of the assets and the total of the liabilities, to show the net worth. It segregates the various items, to give a maximum of information about the business.

This point will be made clear by a comparative study of the following balance sheets.

A. B.
BALANCE SHEET

| | | | |
|---------------------|----------|------------------|----------|
| Machinery | \$4,000 | Notes Payable | \$4,500 |
| Accounts receivable | 11,000 | Accounts Payable | 14,500 |
| Merchandise | 6,500 | Mortgage Payable | 3,000 |
| Notes Receivable | 7,500 | A. B. Net Worth | 15,000 |
| Cash | 8,000 | | |
| | <hr/> | | <hr/> |
| | \$37,000 | | \$37,000 |

C. D.
BALANCE SHEET

| | | | |
|---------------------|----------|------------------|----------|
| Real Estate | \$11,200 | Notes Payable | \$6,700 |
| Cash | 2,000 | Accounts Payable | 12,500 |
| Accounts Receivable | 3,000 | C. D. Net Worth | 15,000 |
| Merchandise | 5,000 | | |
| Machinery | 13,000 | | |
| | <hr/> | | <hr/> |
| | \$34,200 | | \$34,200 |

¹ The term "balance sheet" technically refers only to a statement taken from books of double entry. The term "statement of assets and liabilities" refers to statements prepared from other records.

Here are two businesses of the same general character. Judging from the balance sheet alone, which one is deserving of the extension of credit to the amount of \$2,000? At first glance, there is little to choose between them. The net worth of each business is \$15,000. But a rearrangement of the items, so as to indicate what liabilities must shortly be paid and what assets are available to meet them, would show the balance sheets as follows:

A. B.
BALANCE SHEET

| ASSETS | | LIABILITIES | |
|-----------------------|----------|----------------------------|----------|
| <i>Current Assets</i> | | <i>Current Liabilities</i> | |
| Cash | \$8,000 | Notes Payable | \$4,500 |
| Accounts Receivable | 11,000 | Accounts Payable | 14,500 |
| Notes Receivable | 7,500 | | |
| | <hr/> | | <hr/> |
| Total Current Assets | \$26,500 | Total Current Liabilities | \$19,000 |
| <i>Other Assets</i> | | <i>Other Liabilities</i> | |
| Merchandise | 6,500 | Mortgage Payable | 3,000 |
| Machinery | 4,000 | A. B. Net Worth | 15,000 |
| | <hr/> | | <hr/> |
| | \$37,000 | | \$37,000 |

C. D.
BALANCE SHEET

| ASSETS | | LIABILITIES | |
|-----------------------|----------|----------------------------|----------|
| <i>Current Assets</i> | | <i>Current Liabilities</i> | |
| Cash | \$2,000 | Notes Payable | \$6,700 |
| Accounts Receivable | 3,000 | Accounts Payable | 12,500 |
| | <hr/> | | <hr/> |
| Total Current Assets | \$5,000 | Total Current Liabilities | \$19,200 |
| <i>Other Assets</i> | | <i>C. D. Net Worth</i> | |
| Merchandise | 5,000 | | 15,000 |
| Machinery | 13,000 | | |
| Real Estate | 11,200 | | |
| | <hr/> | | <hr/> |
| | \$34,200 | | \$34,200 |

Now it can easily be seen that C. D. has only \$5,000

with which to meet liabilities of \$19,200. Even if he were given a loan of \$2,000 on his note for sixty days, there still would not be enough to meet his immediate liabilities. The machinery and real estate cannot be expected to pay off the debts, because to sell them would mean the discontinuing of the business. The extent to which the merchandise can be counted on depends on a number of factors, such as the nature of the goods, the terms on which they are sold, and the condition of the stock. If the merchandise is mostly finished stock in a business where goods are sold for cash or on short terms, it will be more readily liquidated than if it is composed of goods in process which when finished can only be sold on long terms of credit. Assuming that 50 per cent of the merchandise is readily salable for cash, we have only \$7,500 in assets to meet \$19,200 in liabilities. But A. B.'s balance sheet shows current liabilities of \$19,000 with available assets of \$26,500, leaving a working capital of \$7,500. His business, evidently, is in much better condition than C. D.'s business.

Form of balance sheet.—The arrangement of the items on a balance sheet varies somewhat, the American form having the liabilities on the right and the assets on the left. The British practice is the direct opposite—the liabilities being on the left, and the assets on the right. The assets are divided into several classes, the usual order being Fixed Assets; Intangible Assets; Current Assets; Working and Trading Assets; and Deferred Charges to Expense. Liabilities are usually grouped as Fixed; Current; Deferred Credits to Income; and Capital; though the latter is not, strictly speaking, a liability. Indeed

capital is the ownership in the business—it is simply the difference between the assets and liabilities. This conventional arrangement of assets and liabilities is often varied by having the current assets and current liabilities at the head of the respective sides of the Balance Sheet.

The following is typical of the form of balance sheet of a manufacturing corporation:

X. Y. Z. MANUFACTURING COMPANY

GENERAL BALANCE SHEET

DECEMBER 31, 1917

ASSETS

Fixed Assets

| | |
|------------------------------|----------|
| Land | \$35,000 |
| Buildings | 200,200 |
| Machinery and Equipment..... | 142,880 |
| Furniture and Fixtures..... | 3,515 |
| Good-will | 100,000 |

| | |
|-------------------------|-----------|
| Total Fixed Assets..... | \$481,595 |
|-------------------------|-----------|

Working and Trading Assets

| | |
|-----------------------------|-----------|
| Materials and Supplies..... | \$126,912 |
| Goods in Process..... | 78,619 |
| Finished Goods..... | 148,640 |

| | |
|--|---------|
| Total Working and Trading Assets | 354,171 |
|--|---------|

Current Assets

| | |
|--------------------------|----------|
| Cash | \$98,808 |
| Accounts Receivable..... | 147,680 |
| Notes Receivable | 37,500 |

| | |
|---------------------------|---------|
| Total Current Assets..... | 283,988 |
|---------------------------|---------|

Deferred Charges to Expense

| | |
|------------------------|---------|
| Insurance Prepaid..... | \$1,868 |
| Interest Prepaid..... | 175 |
| Advertising | 500 |

| | |
|---|-------|
| Total Deferred Charges to Expense | 2,543 |
|---|-------|

| | |
|-------------------|-------------|
| TOTAL ASSETS..... | \$1,122,297 |
|-------------------|-------------|

| LIABILITIES AND CAPITAL | | |
|------------------------------------|-----------|-------------|
| <i>Fixed Liabilities</i> | | |
| Mortgage Payable..... | | \$140,000 |
| <i>Current Liabilities</i> | | |
| Accounts Payable..... | \$76,496 | |
| Notes Payable..... | 48,800 | |
| Dividends Payable..... | 35,500 | |
| | <hr/> | |
| Total Current Liabilities..... | | 160,796 |
| <i>Reserves</i> | | |
| For depreciation of: | | |
| Fixtures | \$ 707 | |
| Machinery | 24,276 | |
| Buildings | 10,010 | |
| For Doubtful Accounts Receivable | 2,750 | |
| For Income and Excess Profits | | |
| Taxes | 35,000 | |
| | <hr/> | |
| Total Reserves..... | | 72,743 |
| <i>Capital</i> | | |
| Common Stock Outstanding..... | \$300,000 | |
| Preferred Stock Outstanding..... | 250,000 | |
| | <hr/> | |
| Total Reserves..... | | 550,000 |
| <i>Surplus</i> | | |
| Profit and Loss Surplus Jan. 1/17. | \$170,931 | |
| Profit and Loss for year ended | | |
| December 31, 1917..... | 27,827 | |
| | <hr/> | |
| Surplus December 31..... | | 198,758 |
| | <hr/> | |
| TOTAL LIABILITIES AND CAPITAL..... | | \$1,122,297 |

Bank statements.—An unusual form of financial statement is that published by the Corn Exchange Bank of New York. It has the great advantage of being “a bank statement that any man or woman can understand.”

THE CORN EXCHANGE BANK

NEW YORK

Statement of July 1, 1918

The Bank Owes to Depositors, Payable on Demand.. \$136,015,512.47

A conservative banker always has this indebtedness in mind, and he arranges his assets so as to meet any request for payment.

For this Purpose we Have:

| | |
|--|------------------|
| 1. Cash | \$28,619,210.12 |
| (Gold, Bank Notes and Specie) and with legal depositories returnable on demand. | |
| 2. Checks on Other Banks..... | 9,829,525.49 |
| Payable in one day. | |
| 3. Loans to Individuals and Corporations..... | 13,548,786.74 |
| Payable when we ask for it; secured by collateral of greater value than the loans. | |
| 4. Bonds | 40,970,648.25 |
| Of United States Government \$22,804,091.06 | |
| Of Railroads and other corporations of first quality and easily salable..... 18,166,557.19 | |
| 5. Loans | 49,856,242.31 |
| Payable in less than three months on the average, largely secured by collateral. | |
| 6. Bonds and Mortgages and Real Estate..... | 1,146,375.78 |
| 7. Our Sixteen Banking Houses..... | 3,400,554.02 |
| All located in New York City. | |
| <hr/> | |
| Total to meet Indebtedness..... | \$147,371,342.71 |
| <hr/> | |
| 8. This Leaves a Surplus of..... | \$11,355,830.24 |
| Which becomes the property of the Stockholders after the debts to the Depositors are paid. | |

VALUATION OF ASSETS

Balance sheet is a statement of opinion.—If a man owns a building valued at \$100,000, subject to a mortgage of \$30,000, his net worth—assuming that he has no other property—is \$70,000, on the theory that if he were to sell the building and pay off the mortgage he would have \$70,000 left in cash. Practically, he would have either more or less than \$70,000, for it is almost impossible to determine in advance of an actual sale the cash value of an asset. Until the asset has actually been liquidated—that is, converted into cash, any figure in the balance sheet is merely an expression of opinion. It is important that a careful estimate be made of the value of all the assets in the balance sheet. Unless these estimates

are correct, neither too high nor too low, the business man may be misled as to his financial position.

In order to understand a financial statement, it is necessary to know what items are included under each heading of the balance sheet and the basis upon which each has been evaluated.

FIXED ASSETS

What are fixed assets.—Fixed assets are those assets of a permanent nature which the corporation, or individual, does not intend to dispose of, or which could not be disposed of without seriously interfering with the operation of the business.

Real estate.—Balance sheets very often show the value of the land and improvements in one account under the name of Real Estate, Real Property, or Cost of Property. While this method is legally justified, on the ground that the buildings erected on land become a part of it, the accountant prefers to keep the valuation of the land and that of the buildings separate. The reason for this is that in the case of buildings depreciation must be provided for, while in the case of land no such provision is ordinarily required. Land should ordinarily be valued at its original cost, including the costs of acquiring title, such as title search, recording fees, and the like. In addition, the land should be charged with the cost of any improvements, such as grading and draining, or with taxes levied for the special purpose of making improvements to the land. Lands purchased for investment or for the purpose of development and subsequent sale are treated in much the same manner. All carrying charges, such as taxes and interest, are added to the cost of the land in

order that the net profit from the sale of the land may be determined. Conservative accounting practice requires that a reserve should be created for at least a part of such capitalized charges to provide against the failure to recover such charges upon the subsequent sale of the property.

Improvements upon leased ground.—Unless there is an agreement to the contrary, permanent improvements made upon leased land pass to the landlord at the expiration of the leasehold period. Consequently, the value of the improvements should be written off over the period of the lease. Fixtures placed on the property by the tenant, however, may be removed by him during the term of the lease, providing their removal will not injure the property. Hence, not the entire value of the fixtures, but only the depreciation on them, need be written off during the term of the lease. Moreover, if the contract provides, as it often does, that the landlord is to pay the tenant, at the expiration of the period, a fixed sum for the tenant's permanent improvements, only that part of the value of the improvements which will not be recovered from the landlord should be written off.

Valuation of leasehold rights.—Where a leasehold right is sublet it is not customary to capitalize the value of the contract, but the question of the valuation of such contracts often arises in the case of partnerships when it is necessary to determine the value of a partner's interest.

The difference between the amount received for the leasehold and the amount paid, therefore, may be regarded as an annuity for the number of years the lease has to run, the present value of which may be determined

from any compound-interest table. The present value of any sum recoverable from the landlord at the end of the leasehold period may be determined from the interest tables and added to the present value of the annuity.

Wasting assets.—Mines, oil wells, and timber lands are “wasting assets,” in that every dollar’s worth of ore, oil or timber taken from the property reduces the value of the land for the purpose for which it was originally acquired.

Theoretically, the total mineral or oil contents of the property should be determined, thereby establishing a unit property-cost, that is, the cost per ton of coal, or per gallon of oil. The procedure then should be, to reduce the value of the property annually by an amount found by multiplying the number of units extracted by the cost per unit. In practice this method is not always followed, because, except in the case of coal mines, it is difficult and in most cases impossible to estimate the mineral contents with any degree of accuracy. Moreover, the creation of a reserve for depletion imposes upon the directors the alternative of declaring dividends out of capital or of withholding such a portion of the receipts as represents a return of capital and investing it either in securities or in additional mineral properties. Both methods are open to objections; investors in mining property do not wish to be limited to the return on savings-bank deposits or Government bonds, nor do they wish to have their funds invested in other mining properties. In short, the stockholder in a mining corporation wants all the proceeds from the property of the corporation to be returned to him. He should realize, however, that the returns will

not continue indefinitely, and that each dividend represents in part a return of his capital investment.

Cost of buildings.—Buildings should be valued at the amount paid for them. Where a corporation erects its own buildings, the cost of construction should include not only that of all labor and material used directly upon the buildings, but also supervision fees and the value of the time of the executive officers spent in supervising the construction. It is customary also to include all incidental and relevant expenses incurred up to the time the building is put into actual use. Thus insurance, taxes, interest on borrowed money and, according to some authorities, the discount on securities issued in the financing of the construction would be added to the cost. Where the erection of a new building necessitates the destruction of an old building, the cost of the old building is added either to the cost of the land, or to the cost of the new building.

Repairs, renewals and betterments.—The only additions to the original cost of the buildings should represent betterments. Repairs and renewals should not be capitalized. The distinction between repairs or renewals, and improvements or betterments, has been fully discussed in the chapter on "Accounting Principles."

Equipment.—The equipment account should show the cost of those items which are not part of the building but which are essential to the operation of the building, such as boilers, dynamos, heating plant, or electric equipment. The equipment may be classified under various headings, either by kind or by operating units.

Machinery account.—The machinery account should

not include any tools having a life of less than one year, as such tools should be charged directly to factory expense. All machinery should be carried at cost, and a reasonable provision should be made for depreciation. The various methods of calculating depreciation have been covered in the chapter on "Accounting Principles."

Furniture and fixtures.—The furniture and fixtures' account may be divided into office furniture and fixtures, and show-room furniture and fixtures. The depreciation on this asset should be at high rate. Some banks carry this asset at a nominal figure. In fact it is not an uncommon practice to capitalize the amount of the original purchase and to charge all subsequent purchases to expense.

Patterns, drawings and dies.—There is a tendency among manufacturing concerns to carry all patterns, drawings, lasts and dies at cost, without considering whether or not they have any value after their initial use. The value to be placed on these items depends upon the nature of the business; if the business consists of "special order" work, the patterns have very little value; the contrary is true if the business is staple and the same model is used for several years. In the open market, however, patterns and dies have nothing more than a scrap value, and for this reason they should be valued very conservatively.

Equipment purchased on the partial-payment plan.—Where equipment is purchased on a partial-payment plan, the purchaser's equity during the rental period may be shown by either of two methods. The first is to set up as an asset the amount paid on account of the con-

tract. This method does not show the liability for the unpaid installments, nor does it show the total cost of the equipment upon which depreciation must be calculated. The second method is to show the contract in the accounts by setting up as an asset the cost of the equipment with a contra reference to the liability in favor of the sellers. As the payments are made they are credited to the liability account, which will finally be wiped out.

Intangible assets.—The assets of a corporation often include certain items which are neither tangible property nor a direct right to tangible property. Such items are called intangible assets. The most common assets in this group are good-will, patents, trade-marks, and copy-rights.

Good-will.—Good-will is the intangible quality of patronage which attaches to an established business and is presumed to attach to it, irrespective of any change in ownership. Good-will depends upon many factors, such as location or reputation and integrity of the proprietor, or it may be the result of a legal or natural monopoly. From the accountant's point of view, good-will should appear on the balance sheet only after it has been acquired, and then for the original cost only. For example, if a business is purchased, the difference between the value of the physical assets and the purchase price would be set up as the cost of good-will. Good-will should not be created arbitrarily upon the books of a business. An intending purchaser would value the good-will independently, without regard to its value in the balance sheet, while bankers and credit men usually ignore the item entirely

Franchises.—Franchises are privileges granted by the State. They may be classed as general or special. General franchises are those which can be multiplied indefinitely, such as the privilege of being a corporation; special franchises are those which cannot be multiplied indefinitely, as the franchise to use the public streets. The cost of acquiring a general franchise is an expense which is incident to the organization of every corporation and is grouped with other organization expenses, the disposition of which is discussed later.

The cost of acquiring a special franchise either from the State or by purchase may be capitalized and carried as an asset. The arbitrary placing of a value upon franchises is open to the same objections as the arbitrary valuing of good-will—that the value of the franchise depends upon the earning power of the business and not upon the figure at which it appears in the books.

Patents, trade-marks and copyrights.—A patent is a grant made by the Government to an inventor, conveying and securing to him the exclusive right to make and sell his invention for a period of seventeen years. The grant may be renewed only by special act of Congress.

A trade-mark is a grant made by the Government reserving to the holder of the grant the right to use a certain label, design, slogan or device as his exclusive trade-mark. This grant runs for thirty years.

A copyright is a grant conveying the exclusive privilege of printing, publishing or vending copies of certain artistic, musical or literary productions, for a period of twenty-eight years, and is renewable under certain conditions for a like period.

A patent purchased from an inventor or from a former owner should be valued at the purchase price. If the invention is made by employees of the concern it is proper to charge the patent with the entire cost of the experiments and with all fees paid to obtain the patent. In either case the value should be entirely amortized during the legal life of the patent. A better plan would be to write off the patent over a period less than its legal life, because there is the constant danger of its being rendered valueless by new inventions.

A trade-mark may have a value after its legal life has expired, but such value is in the nature of good-will and should be shown as such.

Copyrights should be written off over as short a period as possible. Unless a high price has been paid for the copyright, it should be considered as an expense of the first edition of the work.

Treasury stock.—Treasury stock is that stock of a corporation which, having once been issued for value, is subsequently acquired by purchase, donation or exchange. It should be distinguished from unissued stock, which is not an asset. Treasury stock is an asset in that it represents value received, but as long as it is held by the corporation it does not receive dividends nor can it be voted at the meetings of the corporation.

Creating treasury stock by donation is a method used to avoid the restrictions against the issuance of stock below par.

The entire stock is usually issued in exchange for property or services, the recipients of the stock then donating a portion of the stock back to the corporation.

This stock is then unrestricted as to the price at which it may be sold. The donated or treasury stock is usually entered at par, a "donation" or "donation reserve" account being credited. Any loss on the sale of the treasury stock is charged against the donation account. While the theoretical disposition of the donation account would be to apply it to reducing the valuation of the assets for which the stock was originally issued, this is seldom done, because such a procedure would be an admission on the part of the directors that the assets had been overvalued. The usual procedure is to hold the reserve account open until the corporation "is on its feet" and then transfer it to the surplus account.

CURRENT ASSETS

What are current assets.—Current assets are those assets which are available for the discharge of current liabilities—such assets as cash on hand and in banks, notes receivable, accounts receivable, and the like.

Cash in banks.—"Cash in banks" should include only undrawn deposits in solvent banks, or with other depositaries, subject to check. In determining the balance, all checks issued against the deposits should be deducted, regardless of whether or not all of these checks have been deducted by the bank. If more than the bank balance has been withdrawn the overdraft should be shown as a liability.

Cash on hand.—"Cash on hand" should not include "I.O.U's," post-dated checks, balances in the hands of agents for expenses, or memoranda of money advanced. Actual cash in the hands of branch offices or stores that is

not tied up in any manner may be included as cash on hand.

Notes receivable.—The item “Notes Receivable” should include negotiable promissory notes or accepted drafts received from customers for goods sold which have not been discounted or assigned. The term “Notes Receivable” is used instead of “Bills Receivable,” to avoid confusion with bills received for merchandise purchased. Where notes receivable have been discounted, opinions differ as to how the contingent liability as an endorser should be shown. Some authorities hold that the total amount of notes received should be shown as an asset until the note is paid by the maker, and that an offsetting liability should be created for the amount of notes discounted and as yet unpaid. The majority of credit men, however, prefer that only the amount on hand be shown as an asset, and that the contingent liability on notes discounted be shown in a footnote.

Where notes are received from officers, directors, partners or others interested in the business they should not be shown in “Notes Receivable” but in a separate account. They may be legitimate assets but, in order that the balance sheet may give the maximum of information, all transactions incidental to and not forming a necessary part of the business should be shown in an account separate from that which shows the transactions of the business proper.

Where one company advances either cash or merchandise to a subsidiary company on its note, such a note should not be included in “Notes Receivable.” Such advances often represent an investment in the subsidiary

company and, since "Notes Receivable" is considered a quick asset, it would be misleading to group such notes with those received from customers in the ordinary course of business.

Notes receivable are not always worth their face value. Where notes are accepted in settlement of overdue accounts they should not be appraised as "good" for the full amount. Where goods are sold almost entirely upon open account a large amount of notes receivable would be looked upon with suspicion. In other lines of business, however, nearly all merchandise is sold for notes and the item "Notes Receivable" could well be large. Moreover, with the provisions for rediscounting under the Federal Reserve system it is expected that notes or trade acceptances will take the place of the open account, and make large balances of "notes receivable" more highly valued.

Accounts receivable.—"Accounts Receivable" should include only the balance of charges against debtors, usually for merchandise sold and delivered. Advances to salesmen, loans to officers or employees, and overdrafts of partners should be shown separately.

Accounts receivable from subsidiary companies should be shown separately, for the same reasons that were given in the case of the notes.

The accounts receivable form one of the most important assets and are largely relied upon to meet the current liabilities. The total amount of accounts receivable should be in fair proportion to the sales. If a concern does a business of \$100,000 a month on a maximum credit period of 60 days, accounts receivable to the extent of \$350,000 would be disproportionately large, and

would indicate that old or doubtful balances were being carried forward, or that ordinary collections were not being made promptly.

Reserves should be created for all doubtful and disputed accounts and also for any deductions that the accounts are subject to, such as allowances, trade discounts, or claims for defective goods.

Investments in stocks and bonds.—Only temporary investments of surplus funds in securities should be included in current assets. Investments of reserve funds should be shown as funds ear-marked so as to designate their purposes. Investments for the purpose of controlling the activities of other organizations should be distinctly marked as investments in controlled organizations. The value of such securities can be determined only by a careful study of the balance sheet of the controlled company.

WORKING AND TRADING ASSETS

Inventories.—The inventories of unsold merchandise and supplies are usually grouped in the balance sheet under the head of "Working and Trading Assets." Inventories may be divided into raw material, goods in process, finished goods, and supplies; and the separate divisions should be shown upon the balance sheet. The inventory should wherever possible be the result of an actual physical inventory, although if accurate stock records are kept and frequently compared with the physical stock, the book figures may be accepted.

Valuation of merchandise.—As a general rule, merchandise should be valued at cost or market price, which-

ever is the lower. Where the market price is higher than cost, the cost basis should be used. Where the market price is lower than cost a known loss exists, which should be taken upon the books, but where the market price is higher it is poor business policy to take up an unrealized profit which may in fact never be realized. Moreover, only salable merchandise should be valued at cost. Merchandise which is shop-worn or out-of-date should be carried at its realizable value.

By cost is meant the cost at the store, factory, or warehouse. It is proper to add to the original purchase price the expense of bringing the merchandise to the storehouse, including freight and cartage, warehouse and terminal charges, and, in the case of imported goods, marine insurance and duty.

Work in process should be valued at the cost of the raw material and direct labor entering into it, plus a proportion of the manufacturing overhead. Where an adequate cost system is maintained the valuation of goods in process on the above basis is not difficult.

Finished goods should be valued at the cost of manufacturing. Some merchants value their merchandise when ready for sale at the selling price. Unless the goods have actually been sold so that title has passed, this method is obviously wrong. It takes in the profit on the sale before it is completed without taking in any of the expenses of making the sale. In some cases, where the goods are manufactured under a contract which passes title to the vendee as soon as the article is completed, the manufacturer would be justified in valuing his finished goods at sales prices.

DEFERRED CHARGES TO EXPENSE

What are deferred charges.—Where liabilities have been incurred or cash paid for items of expense the benefit or a part of the benefit of which will be enjoyed in a succeeding period or periods, the portion of the expense applicable to the later period is shown upon the balance sheet as a deferred charge to expense. These assets are sometimes called prepaid expenses, or deferred assets.

Organization expenses.—The expenses incident to the organization of a corporation, such as incorporation fees or taxes, and legal and accounting fees, are an illustration of the type of asset known as "organization expenses." These expenses are incurred only once during the life of the corporation, but the benefits continue as long as the corporation exists. Conservative accountants and business men show the organization expenses at the end of the first year as a deferred charge, but write them off within the following three to five years.

Prepaid expenses.—Other examples of deferred assets are those expenses which are ordinarily paid in advance, such as rent, insurance and interest. Any portion of such expenses which applies to succeeding periods may properly be capitalized. For example, if a concern, in advertising its products, spends considerable sums of money the benefits of which are not received in the year in which the expenses are incurred, it is justified in treating the cost of the advertising campaign as an asset for a limited period. The capitalization of expenditures of this kind should be for a short period. In unusual cases it may be permissible to carry these expenditures as capital assets for a longer period, but the practice of carrying

them permanently, as a form of good-will, is not to be commended. It is true that if a national advertising campaign is successful it results in the creation of good-will, but, as stated before, good-will (except in the case of actual purchase) is indicated by increased income and not by an item in the balance sheet. As a general rule it may be said that expenses should not be capitalized unless an immediate and definite benefit will accrue to the following periods.

Discounts on bonds.—The sale of bonds at a discount is a method of giving the purchaser a higher rate of interest than that specified in the bond. The discount, or difference between the face amount and the amount actually received, is a prepayment of the additional interest. The discount should be set up as an asset and written off ratably over the life of the bonds. The practice of adding to the cost of construction the discount on bonds issued to finance the construction is not regarded as being in line with a sound financial policy. The cost of construction should not be affected by the method by which the construction is financed.

ANALYSIS OF LIABILITIES

Liabilities and capital.—On the right side of the balance sheet are found the liabilities and capital. A liability is a claim against a debtor which gives the creditor a right of action at law. The capital account represents not a liability but an accountability—the accountability of the business to its owners. Liabilities are usually classed as fixed liabilities, current liabilities, and deferred liabilities or deferred credits to income.

Fixed liabilities.—"Fixed liabilities" should include those liabilities which are not to be liquidated in the ordinary course of business. These are sometimes called capital liabilities, because the proceeds of such liabilities are usually invested in fixed or capital assets. If there are various mortgages and issues of bonds, they should be shown separately, giving the date of maturity, the rate of interest, and the property pledged as security for each issue. Chattel mortgages, which are mortgages on personal property, may be shown either on the balance sheet proper or in a footnote. In most cases, chattel mortgages are given as additional security for merchandise purchased on credit, and their omission from the balance sheets places subsequent creditors at a disadvantage.

Current liabilities.—"Current Liabilities" includes all liabilities which are to be met in the ordinary course of business, usually within a period of one year. Notes payable should be classified as notes to trade-creditors, notes to banks, notes to officers, and the like. All interest should be accrued up to the date of the balance sheet. Notes to trade-creditors or "accounts payable" will include all amounts due for merchandise or supplies purchased and for other expenses incurred in the ordinary course of business. Expenses accrued should include all amounts due and unpaid at the date of the balance sheet for salaries, wages, telephone, light, and other similar items. Taxes accrued up to the date of the balance sheet should be shown as a separate item, and should include the estimated amount of income and other Federal taxes accrued. Dividends are a liability only when declared by the directors. Unpaid dividends on cumulative preferred

stock are not a liability, but for the protection of possible investors in the common stock the amount of dividends in arrears should be stated in a footnote attached to the balance sheet. The contingent liability on notes receivable discounted has been discussed in connection with notes receivable. A similar contingent liability exists in the case of the debt or rental of a subsidiary guaranteed by a parent company. It is customary to show the contingent assets and liabilities not in the balance sheet proper, but in a footnote attached to the balance sheet.

Deferred credits to income.—Where income is not applicable to the year in which it is received, such as rent received in advance or premium received on bonds sold, the crediting to income should be deferred until such time as it is earned, and the amount so received should be shown in the balance sheet as a deferred credit to income.

Capital and surplus.—The difference between the assets and liabilities of the business constitutes the capital of the business. In the balance sheet of a sole proprietor this is stated as capital or present worth; in the case of a corporation it is separated into capital stock and surplus, the former representing the original capital contributed, the latter the subsequent earnings reinvested in the business. The laws of most States prohibit the payment of dividends out of capital. Although the surplus account theoretically represents the profits from the business operations it may include a surplus contributed at the time of organization or reorganization, or a surplus created by revaluation of assets or by other means.¹

While surplus however created may legally be dis-

¹ See chapter on "Financing."

tributed, the stockholder should be notified of the source of such a dividend in order that he may not be led to believe that the dividend has been paid out of current earnings.

It is only too common to find in published balance sheets an item "Surplus and Reserves." Reserves to provide for a decrease in the value of assets, such as reserves for depreciation or bad debts, are not a part of the surplus and should be shown separately. To prevent confusion with the surplus account the reserves are often deducted directly from the value of the asset. Thus the machinery account would be shown in the balance sheet as follows:

| | |
|------------------------------------|-----------|
| Machinery | \$100,000 |
| Less reserve for depreciation..... | 10,000 |
| | <hr/> |
| Net value | \$90,000 |

The combining of surplus and reserve accounts is often used to cover losses in operation or failure to provide for depreciation.

Interpretation of balance sheet.—As shown by the balance sheets of A.B. and C.D., in the early part of this chapter, the amount of capital possessed by a business is not the most important indication of its condition. A concern may have an excess of assets over liabilities and yet be forced into a receivership, for it may be unable to meet its maturing liabilities. The ratio between current assets and current liabilities is therefore important. No standard ratio can be fixed, although bankers like to have it at least 2 to 1 and preferably as high as 4 to 1. Special circumstances may prevent the maintaining of this ratio and these circumstances must be considered before pass-

ing judgment upon the statement. For example, certain businesses are seasonal and a large stock of merchandise must be accumulated to meet the demands of the trade. Thus, in the fur manufacturing business, few if any statements prepared as of July 1 would show a ratio as high as 2 to 1. In rising markets the tendency of manufacturers is to invest surplus funds in raw materials in order to take advantage of the increase in price. Merchandise inventories are not usually included among the current assets, but in the inventory. From the amount of raw material, work in process, and finished goods shown by the inventory, we can determine the extent to which the merchandise may be relied upon to meet the liabilities. Finished goods in a staple line are of almost equal value with accounts receivable, while goods in process have very little value until completed. The inventory should also be viewed in connection with the amount of sales. Thus an inventory of \$500,000 and annual sales of \$1,000,000 would indicate either that the inventory had been inflated or that out-of-date and unsalable stock had been included. Before forming a conclusion that the inventory is too large, the following factors should be considered—length of the manufacturing process, composition of the inventory, trade conditions, and unfilled orders. It is evident that a concern whose manufacturing process takes two months will require a larger inventory in proportion to its sales than one in which the process takes two weeks. Likewise, a large inventory of raw materials may be justified because of an exceptional opportunity to purchase at an attractive price or because of rising markets. A heavy inventory of finished goods may be justi-

fied in a seasonal business, or in cases where there is a large number of unfilled orders on hand.

Comparative balance sheets.—As balance sheets are more frequently published than are income statements, it frequently is necessary to judge of the progress of a business by comparing two successive balance sheets. The first indication of a profit is an increase in the surplus account, but, as is shown by the following illustration, an increase in surplus does not always represent earnings.

A. B. COMPANY

COMPARATIVE BALANCE SHEETS

| <i>Assets</i> | 1916 | 1917 |
|---|------------------|--------------------|
| Cash | \$ 27,300 | \$ 18,000 |
| Accounts Receivable..... | 165,700 | 146,300 |
| Stock | 97,000 | 497,000 |
| Real Estate..... | 224,000 | 251,700 |
| Good-will | 150,000 | 150,000 |
| Deficit | 50,000 | |
| Total Assets..... | \$714,000 | \$1,063,000 |
| <i>Liabilities and Capital</i> | | |
| Notes Payable..... | \$134,000 | \$ 166,000 |
| Accounts Payable..... | 80,000 | 230,000 |
| Surplus | | 167,000 |
| Capital | 500,000 | 500,000 |
| Total Liabilities and Capital..... | \$714,000 | \$1,063,000 |

Analysis.—The concern has changed a deficit of \$50,000 into a surplus of \$167,000 and has presumably earned \$217,000. As a matter of fact, the financial position has become worse, instead of having been improved. The current assets have decreased almost \$30,000. The real estate has increased nearly \$28,000, which increase accounts for the most of the decrease in the current assets. The merchandise inventory has increased \$400,000, \$182,000 of which is accounted for by an increase in cur-

rent liabilities. The remaining \$218,000 of the increase in merchandise inventory represents the profits supposed to have been earned. In the absence of any other evidence we are forced to the conclusion that the merchandise inventory has been greatly overvalued, and that a large part of the supposed profit does not exist.

THE INCOME STATEMENT

Value of the income statement.—While we have seen that considerable information as to the condition of a business may be obtained by a study of its balance sheet, and that still more knowledge may be had from the statements of several successive years, still we do not know the causes of the changes in the financial position. The "Income Statement" or, more fully, the "Statement of Income, Profit and Loss" furnishes us the needed information; it explains in detail the transactions of the fiscal period, and from it we can judge of the efficiency and progress of the business.

X. Y. Z. MANUFACTURING COMPANY

STATEMENT OF INCOME, PROFIT, AND LOSS

For the year ended December 31, 1917

| | | |
|---|----|-------------|
| <i>Sales</i> | | \$1,396,528 |
| Cost of Goods Sold | | |
| Materials and Supplies..... | \$ | 494,964 |
| Direct Labor..... | | 315,127 |
| Indirect Labor..... | | 146,467 |
| Heat, Light and Power..... | | 12,165 |
| Alterations, Repairs and Renewals..... | | 1,276 |
| Depreciation of Machinery..... | | 14,288 |
| Freight and Cartage..... | | 2,967 |
| Decrease in inventory of raw material and goods in process..... | | 40,396 |
| Total Cost of Manufacture..... | \$ | 1,027,650 |
| Add—Decrease in inventory finished goods.. | | 41,128 |

FINANCIAL STATEMENTS

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| | | |
|---|----------|------------------|
| Cost of Goods Sold..... | | 1,068,778 |
| <i>Gross Profit on Sales</i> | | <i>\$327,745</i> |
| Selling Expenses | | |
| Salaries of Salesmen..... | \$34,007 | |
| Commissions | 45,126 | |
| Traveling Expenses..... | 6,619 | |
| Advertising | 8,109 | |
| Total Selling Expenses..... | | 93,861 |
| <i>Selling Profit</i> | | <i>\$233,884</i> |
| Administrative Expenses | | |
| Salaries of Officers and Clerks..... | \$78,629 | |
| Stationery and Printing..... | 1,490 | |
| Telephone and Telegraph..... | 776 | |
| Postage Expense..... | 995 | |
| Depreciation of Office Equipment..... | 351 | |
| Provision for Doubtful Accounts..... | 3,785 | |
| General Expense.. | 15,960 | |
| Total Administrative Expenses..... | | 101,986 |
| <i>Net Profit on Sales—Income from Operations</i> | | <i>\$131,898</i> |
| Other Income | | |
| Interest on Notes Receivable..... | \$311 | |
| Interest on Bank Balances..... | 445 | |
| Cash Discount on Purchases..... | 3,739 | |
| Total Other Income..... | | 4,495 |
| <i>Total Income</i> | | <i>\$136,393</i> |
| Deductions from Income | | |
| Interest on Notes Payable..... | \$2,289 | |
| Cash Discount on Sales..... | 24,945 | |
| Depreciation of Building..... | 5,004 | |
| Taxes on Building..... | 523 | |
| Insurance | 5,305 | |
| Total Deductions from Income..... | | 38,066 |
| <i>Net Income—Profit and Loss for the period</i> | | <i>\$98,327</i> |
| Distribution of Net Income | | |
| Reserved for Taxes..... | \$35,000 | |
| Preferred Dividend..... | 17,500 | |
| Common Dividends..... | 18,000 | |
| Total Income Distributed..... | | 70,500 |
| <i>Surplus for Period</i> | | <i>\$ 27,827</i> |

Gross income.—The first item appearing in any income statement should be the primary gross income, which, in the case of manufacturing and mercantile businesses, is "Gross Sales." As explained in the chapter on "Principles of Accounting," approval sales or merchandise shipped on consignment should not be included with the completed sales. If such transactions have been entered upon the books as sales, the amount should be deducted from the total of the sales, as well as from the total of accounts receivable, and the cost of the merchandise in the hands of customers should be shown as part of the inventory. Where freight, parcel post, insurance or other charges are prepaid by the seller and then added to the invoice, such charges should not be credited to the sales account. Crediting the sales account with these results in an overstatement of sales and an understatement of expenses.

It is advisable to show the amount of cash sales and sales on credit separately. The amount of sales on credit, taken in conjunction with the terms of credit, is an indication of the proper amount of accounts receivable. Thus if the annual business is \$120,000 and the terms of credit 60 days, the outstanding accounts should not exceed \$20,000. If the accounts are considerably in excess of this, they will include old and worthless balances, unless, perhaps, the business is seasonal and the statement is taken at the close of the season.

Trade discounts are very often deducted upon the face of the invoice and the net amount entered in the sales account. If, for any reason, it is desired to keep a record of the trade discounts allowed, the sales may be entered

"gross" and the trade discount shown as a deduction from sales.

Sales returns should be shown as a separate item. The practice of returning goods is one of the evils of modern business which may be partly controlled if the management is properly informed. Allowances made to customers for defective merchandise, for breakage, or for other causes, as distinguished from mere price corrections, should be shown as a deduction from sales.

The amount of the gross sales, less that of sales returns and allowances, is called the **"net sales,"** and is the basis of all percentage calculations based upon sales. The relation between the amount of sales and the amount of the final inventory has already been discussed, in connection with the interpretation of the balance sheet, as have the factors that should be considered before deciding whether or not the amount of the inventory figures is too large.

Unusual transactions, such as sale of land holdings, patent rights, and the like, should not be confused with the ordinary business transactions. They should be shown as **"other income"** under sufficiently descriptive headings.

Cost of sales.—The cost of merchandise sold during the period is found by adding to or subtracting from the cost of manufacturing (which includes the cost of material, labor, and factory expenses consumed); the decrease or increase in the inventory of finished goods; the decrease in inventory being added to the cost, the increase being subtracted. This method may be made clearer by the following example.

| | |
|---|-----------|
| Inventory of Finished Goods, beginning of period..... | \$100,000 |
| Cost of Manufacturing..... | 350,000 |

| | |
|--|-----------|
| Total..... | \$450,000 |
| Less Inventory of Finished Goods at the end of period..... | 90,000 |

| | |
|-------------------------|-----------|
| Cost of Goods Sold..... | \$360,000 |
|-------------------------|-----------|

Or:

| | |
|---------------------------------|-----------|
| Cost of Manufacturing..... | \$350,000 |
| Plus Decrease in Inventory..... | 10,000 |

| | |
|-------------------------|-----------|
| Cost of Goods Sold..... | \$360,000 |
|-------------------------|-----------|

In other words, we have sold not only the \$250,000 worth of goods manufactured during the year but, in addition, \$10,000 of the goods remaining on hand at the close of the preceding year.

The cost of manufacturing is found by adding together the purchases of material, labor and factory expenses and adjusting them with the increase or decrease in the raw material and work in process inventories—a decrease in inventory being added to the cost and an increase in inventory subtracted. The form is sometimes arranged as follows:

Inventory—Raw Materials and Goods in Process at the beginning of the period.

| | |
|----------------------------|-----------|
| Purchases—Materials | \$180,000 |
| Labor | 160,000 |
| Manufacturing expense..... | 210,000 |

| | |
|---|-----------|
| Total..... | \$550,000 |
| Less Inventory Raw Materials and Goods in Process at end of period..... | 200,000 |

| | |
|----------------------------|-----------|
| Cost of Manufacturing..... | \$350,000 |
|----------------------------|-----------|

The net result is the same whichever arrangement is used, but the layman may find the adjustment difficult to understand, because of increase or decrease in the inventory.

The valuation of inventories has been discussed in the

early part of this chapter and the elements of factory overhead in the chapter on cost accounting. The only remaining elements of the cost of goods sold are material and labor.

To the purchases of material, whether for cash or on account, there may be added the cost of bringing the material to the factory or warehouse, such as freight, cartage and duty. Purchases and purchase returns may be separated, but the reasons for their separation are not so important as in the case of sales and sales returns.

As to whether the discount allowed on purchase invoices for prompt payment should be deducted from the amount of purchases or treated as other income received, authorities differ. Those who hold to the first theory argue that cost means net cost to the purchaser—that therefore the cost should be the billed price less the cash discount received. The supporters of the second method base their position on the contention that the ability to take advantage of the discount is due to the fact that the business has or can command sufficient capital to enable it to do so. If the expense of borrowing capital is not an operating charge, then the benefit derived from sufficient capital should not be valued as operating income.

All labor or services used in the direct manufacture of the product should be included as labor, including the amount rendered but not paid for at the date of the accounting. Labor or services not directly connected with the manufacturing processes may be shown as indirect labor or may be grouped with the general expenses.

Percentage calculations.—The difference between the income from sales and the cost of goods sold is the gross

profit on sales. In making comparisons between different periods the gross profit may be expressed as a percentage of gross profit either on sales or on cost. Thus if sales amounting to \$75,000 cost \$50,000 the result might be expressed as $33\frac{1}{3}$ per cent gross profit on sales or 50 per cent gross profit on cost. Each method has its advantages and disadvantages; the important thing to remember is that percentages calculated upon sales should not be compared with percentages based upon cost. Whether or not a manufacturer should base his calculations upon sales depends upon the nature of the business. In some lines of business, especially in popular-priced articles, the important problem is to produce and sell the goods at a low enough price. The manufacturer wants to know how much he can allow for manufacturing cost on, let us say, a \$9.00 article. If he is told that his gross profit on sales should be $33\frac{1}{3}$ per cent, he knows at once that his cost should not exceed \$6.00. On the other hand, if he knows that his cost is \$6.00 and desires to know at what price the article should be sold, he wants to know what percentage he should add to the cost to insure himself a fair profit. The answer is, "You should add 50 per cent to your cost."

Turnover.—If two concerns have the same margin of gross profit and one concern turns its stock over twice during the year while the other turns its stock over once, it is evident that the first concern will make more profit than the second. One way to calculate the rate of turnover is to divide the cost of goods sold by the average inventory for the year. The average inventory may be found by taking the sum of the inventories at the be-

ginning and at the end of the period, and dividing this sum by two. If stock records are kept, the monthly inventory should be used.

The accuracy of an inventory may be checked by comparing the percentage of gross profit for the period with that of the preceding period or periods. The percentage of gross profit is also used to estimate the inventory on hand at a given date in such cases as when fire or burglary losses are to be estimated.

Selling expenses.—All the expenses of marketing and of distributing the product should be included under selling expenses. All devices for securing trade are properly chargeable to this group. Thus losses on old models taken as part of the consideration in exchange for new, losses on restaurants in department stores, losses on trading-stamps, and similar expenses should be included as selling expenses. The subtraction of the selling expenses from the gross profit on sales leaves the selling profit.

General and administrative expenses.—Those expenses which have to do with the management of the enterprise and which cannot be apportioned either to manufacturing or selling activities are grouped as administrative expenses. Included in this group would be salaries of administrative officers, depreciation of office furniture, cost of office supplies, stationery, printing, telephone and telegraph and other miscellaneous expenses. By deducting the general expenses we arrive at the net profit, as it is sometimes called, or income from operations.

The operating ratio.—The cost of sales, selling expenses and administrative expense are often grouped to-

gether and known as operating expenses. The percentage of operating expenses to gross income is called the operating ratio. In comparing the efficiency of various railroads and public utilities, a great deal of importance is attached to this ratio, a low ratio usually being a sign of efficient management.

Other income.—"Other Income" should include any income received other than that from the sale of the product or services of the organization. The more common items are: interest on bank balances and on accounts or notes receivable, discount on purchases, rent, commissions or royalties received, and interest and dividends on securities owned.

Charges against income.—All expenses incurred in the procurement and protection of capital should be included as charges against income. As to certain items there is a dispute as to the propriety of their inclusion under this heading. Taxes and rent on factory buildings, some authorities argue, should be charged as manufacturing expenses. The counter argument is that taxes are sums paid for invested capital, and that if the concern did not pay rent it would own a factory, the carrying charges of which would be shown as charges against income. The reasons why cash discounts on purchases should not be deducted from the cost of goods sold are the very reasons why cash discounts on sales should not be deducted from sales, but included as a charge against income.

Profit and loss credits and charges.—If we add other income and subtract the charges against income, the resulting figure will be the net income. This figure, how-

ever, is subject to still further adjustments. Unusual items of income, such as profits from the sale of assets or recoveries on bad debts, should appear as profit and loss credits. On the other hand unusual losses, such as losses from fires, together with provisions for contingencies, and the like, should be included as profit and loss charges.

Distribution of net profits.—After all adjustments are made the resulting net profit is available for distribution. In the case of sole proprietors and partnerships the net profits are added to the owner's capital accounts. Any drawings during the year and any losses from operations are charged to their capital accounts. In the case of a corporation, however, the net profits are either distributed to the stockholders by the directors, or reinvested in the business. The directors of the X.Y.Z. company, whose income statement and balance sheet are exhibited in this chapter, declared a dividend of 7 per cent upon the preferred stock and one of 6 per cent on the common stock. They also set aside \$35,000 as a reserve for income and excess profits taxes. Federal income and excess profits taxes are not an expense of doing business, nor are they a capital charge; their real nature is a distribution of profits to the silent partner, the Government of the United States. The balance, \$27,827, the directors decide not to distribute, but to keep in the business, where it becomes part of the surplus, and is available for the payment of future dividends.

Secret reserves.—Often the profits available for dividends are greater than the amount shown in the surplus account, as a result of the creation of a secret reserve. A

secret reserve is an understatement of the surplus, caused by (1) providing unnecessary reserves for depreciation, (2) making excessive provision for bad debts, (3) charging capital items to revenue accounts, and (4) omitting from the books assets which are owned. Ordinarily, secret reserves are a source of strength in that they prevent the distribution of the entire surplus, and in that they may be drawn upon to equalize dividends in lean years. The principal objections to a secret reserve are that it is misleading and often works an injustice to stockholders who may dispose of their stock upon the basis of the apparent condition of the business, and that it opens the way for manipulation of the accounts by the directors to conceal losses due to mismanagement.

Consolidated statements.—Modern developments in business have resulted in a form of organization known as the holding company. A holding company is one which, by ownership of the stock of other companies, controls their operations. Such controlled companies are known as "subsidiaries." Although the holding company may own all the *stock* of a subsidiary it does not own the *assets* of the company. The balance sheet of the holding company would show—as assets—stocks and bonds owned, while its liabilities usually would consist of collateral trust bonds and short-term notes. Its income statement would show dividends and interest received less general expenses and interest paid. Such statements, however, do not furnish the information which the stockholders and creditors of the holding company desire. They wish to know the condition of the subsidiaries as well. The accountant, realizing that

the function of financial statements is to furnish information, takes it upon himself to prepare a consolidated balance sheet and a consolidated income statement. These statements have no foundation in law, but custom has forced holding companies to furnish such statements. The consolidated statements set forth the financial condition and operations of the group of affiliated corporations as one enterprise; all intercompany transactions and obligations are eliminated, and only the purchases and sales made by the group to outsiders are included—while the balance sheet shows only the liabilities due to outsiders and the capital stock held by outsiders.

Many difficulties arise in the preparation of these statements, such as that of the elimination of intercompany profits included in inventories, and the difficulty of showing the minority stockholders' interest in the surplus of subsidiary companies. These problems, important as they are, do not come within the limited scope of this volume.

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COST ACCOUNTING

What cost accounting is.—Cost accounting, a branch of general accounting, has for its purpose the providing of detailed information as to the separate elements of cost which have entered into an article or product. General accounting shows merely the total profit or loss resulting from the operations of the business; cost accounting shows the profit or loss on each unit, whether the unit be a department, a process, or a single job.

Theoretically, any type of accounting which reveals the result of the operations of the various parts of a business, such as the system used in department stores, might be called cost accounting; in common usage, however, the term "cost accounting" is applied only to that type of accounting which deals with the costs of manufacturing, mining and other businesses, where material and labor enter directly, so to speak, into the finished product. The principles of cost accounting developed in this chapter, therefore, while applicable to any type of business, are explained and illustrated in their application especially to manufacturing rather than to merchandising businesses.

Insufficiency of general accounting.—With a good system of general accounting, the business man can ascertain at the close of each fiscal period the amount of the profit or loss which has resulted from the operation of his business. The fiscal period may be as long or as

short a period as he desires, depending entirely upon how often he is willing to go to the trouble of taking an inventory. The information he gets by means of general accounting, however, is merely the total amount of his profit or loss for the period. If a profit has resulted, he may be satisfied; if a loss is indicated, he may have no means of ascertaining the cause, or of determining how to prevent future losses. The days when he could offset the loss by raising his prices are past. He must meet the competition of other business men, and his prices cannot be raised arbitrarily simply because his business may have showed a loss for the past period. He must know which lines of his business are operating at a loss, and which are showing a profit. If he has this information he can direct his efforts toward manufacturing or selling the more profitable lines.

General figures are often misleading. A business as a whole may show satisfactory results, yet one department may be carrying the losses of the other departments. The insufficiency of general figures is well illustrated by the following incident: A manufacturer had for a number of years conducted a profitable business, making a grade of hats to sell at \$3. In the year 1916, he brought out a new style which proved so popular that the manufacturer practically discontinued his other lines and devoted all his facilities to manufacturing the "leader," which also was priced at \$3. At the end of the year, after almost doubling his gross sales, he was greatly surprised to find that he had actually lost \$10,000. After a careful investigation, he discovered that each hat he had sold had cost him \$3.25. It is not surprising that one of his

competitors had found it cheaper to buy from him than to manufacture hats himself.

Functions and uses of cost systems.—The first function of a system of cost accounting is the calculation of the cost of each unit of production. The information so obtained may be used in the intelligent adjustment of selling prices; or if those prices are fixed by trade customs, in directing selling efforts into the more profitable lines. Not only the individual manufacturer, but also the whole industry is benefited by the installation of cost accounting systems, since the manufacturer who does not have a cost system, but who fixed his prices by "guess-work," may drag others to ruin with him. The manufacturer who knows what his products cost him must nevertheless meet the competition fixed by the one who does not know. As a result of the efforts of the Federal Trade Commission and of the various Manufacturers' Associations, uniform cost systems have been adopted in a number of industries.

The second function of cost accounting is to furnish a basis for comparisons—to present the cost of each unit in such detail that the total cost and the various elements of the cost may be compared with past costs of similar units, with the estimated cost of the same unit, and subsequently with the cost of similar units. In order to make cost records valuable for comparisons as between different periods, it is often necessary to keep the details in terms of units of material and labor, as well as in terms of dollars and cents.

A third function of a cost system is to furnish the factory manager with detailed information as to the opera-

tion of the factory. This information is a sort of by-product of the cost accounting system, but the use the factory executive can make of it is almost unlimited. Some of the data here referred to include: idle time, by departments, machines, or operations; production, by machines, departments, or operators. The executive may utilize this information, for example, in making comparisons of the services or output of the various superintendents, foremen, employees, and production centers. He may use it to prevent "leakage" of material and labor, or in ascertaining the relative advantages of machinery as compared with hand-work in any operation.

So much has been written and said about cost accounting that manufacturers have expected a cost system to be a panacea for all their business ills. A cost system in itself, however, cannot save a business a single cent; all it can do is to furnish information leading to better management. The use that is made of the information determines the value of the cost system. A cost system is a diagnosis—not a cure.

The elements of cost.—Before considering the principles or methods of cost accounting, we must decide just what we mean by "cost." "Cost" is defined by the Federal Trade Commission as "the amount or equivalent paid for anything." Since the manufacturer does not make any profit until his product is sold, the cost he desires to ascertain is that of *making and selling* his product. The difference between that figure and his *selling price* is his *profit*. The elements that make up the cost of manufacturing and selling are shown in the following diagram:

| | | | |
|------------------------------------|-----------------------|-----------------|--------------|
| | | Direct Material | Direct Labor |
| | Mfg. Overhead | PRIME COST | |
| Selling and Administrative Expense | MANUFACTURING COST | | |
| PROFIT | COST TO MAKE AND SELL | | |
| SELLING PRICE | | | |

The terms employed in designating the various elements of cost are not always those which are used in this chart. Thus, "direct labor" is frequently called "productive labor;" "manufacturing overhead" is known as "factory overhead," "on-cost" or "burden;" while "selling and administrative expense" is often designated as "general overhead." Nor is there any general agreement as to the separate items which are to be included under these headings.

Direct Materials.—Direct materials are those materials which form a part of or which are applied directly to the product and which it is practicable to charge directly to the product. In shoe manufacturing, for example, both the oil used in the heeling machine, and the leather used in the heel are materials; the latter, however, goes directly into the shoe, and is classed as direct material, while the former does not form part of the product, although it is necessary in the process of manufacture. The oil, therefore, is classed as "indirect material." Indirect materials may, accordingly, be considered a part of the manufacturing overhead which is prorated over the product (as will be explained later) by any one of a number of different methods.

Direct materials often treated as indirect materials.

—The amount of some particular kind of material used in each unit of the product may be so small, or the difficulty of measuring the quantity used in each unit may be so great, that it may be impracticable to charge the material direct to the product. The trouble and expense of making a separate entry for the small quantity of glue used in making a desk, for example, would outweigh the advantages of exactness in the calculation of the separate units of cost. Hence, some materials which really are direct materials are for convenience included in the manufacturing overhead. In some industries, the amount of such semi-direct material is so large that to "throw" it into overhead is not a satisfactory solution of the problem. The method used is to charge such materials to a separate account, such as "findings," and to charge each unit with the estimated amount of findings used. The accuracy of the estimate is checked up at the end of the fiscal period by comparing the actual amount of findings on hand with the amount shown to be on hand by the findings account. If the actual inventory is less than the estimated, it is proof that the estimate has been too low.

It is evident that the greater the percentage of material charged directly to the product, the more accurate is the cost information obtained. The cost accountant, therefore, is often called upon to devise methods of measuring materials in order to permit of their being charged directly to the product.

Cost of materials.—Materials should be entered upon the books and charged to the product at cost. But what should we consider as being the cost of "materials pur-

chased"? Theoretically, every one will agree that the cost of merchandise is the cost of getting it to the place where it is to be used, that is, the billed price, plus duty, freight, cartage, insurance, and the like. When we stop to consider that all these additional charges will have to be expressed in terms of cost per unit, we must again come to the conclusion that absolute accuracy must be sacrificed to practicability, and that charges for freight, cartage, and other like items should be included in manufacturing overhead. However, these "inward" charges are often prorated over the different materials purchased, as a percentage of their respective values.

The question of cash discounts must also be considered. Those who claim that cash discounts decrease the cost of merchandise will of course enter materials at the billed price less discount, while those who believe that discounts deducted on purchases are income arising from the use of capital will enter invoices at the billed price. Perhaps the best suggestion on this point is that made by Professor Cole¹—that invoices should be entered "net"—that is, less all possible discounts, the difference between the face and net amounts of the bill being charged to an account called "neglected discounts." The amounts of discount actually deducted at the time of payment are credited to Neglected Discounts. The debit balance of this account will show, as its title indicates, the amount of discount of which advantage is not taken. The basis of this argument is that the true cost of merchandise is the lowest price at which the seller is willing to dispose of it, and that by not taking advantage of discounts offered,

¹ William Morse Cole, *Accounts, Their Construction and Interpretation*.

we are not increasing the cost of the goods, but incurring an expense due to lack of capital.

Direct labor.—Direct labor includes the wages of all employees working directly upon the product. Indirect or non-productive labor is that which cannot economically be charged directly to the product, but which is “lumped” with the manufacturing overhead, and distributed over the output—for example, the wages of foremen, inspectors, sweepers and watchmen. Wherever possible, labor should be classed as direct rather than indirect. The wages of machinists’ helpers may be treated as direct labor and charged to the various units on the same basis as that of the machinists whom they help.

Manufacturing overhead.—All items of cost other than those included in direct material and direct labor constitute the “overhead.” For cost accounting purposes overhead is divided into “manufacturing overhead” and “general overhead.” By adding the manufacturing overhead to the prime cost, we obtain the “factory cost” or “cost of manufacturing.” All the elements comprising factory cost are within the control of the factory manager and it is customary to hold him responsible for them. On the other hand, the selling and administrative expenses, or the general overhead, are not within his control. It is therefore important to distinguish between manufacturing overhead and general overhead.

Allocation of certain expenses.—Unfortunately, accountants do not agree as to the allocation of certain items of expense. The chief dispute centers about those items which are classed in the “Statement of Income, Profit and Loss” (see the chapter on “Financial State-

ments"), as charges against income—namely, the items of rent, interest, depreciation of buildings, taxes and insurance.

Our argument for placing interest, depreciation of buildings, taxes, and insurance on buildings in the section headed "charges against income"¹ is that these items are charges for the use or protection of capital and that they should be offset against the income resulting from the use of the capital—that if we actually owned our capital assets, we should have no interest to pay. Rent is included, since it is considered that rent is a substitute for the payment of interest and taxes. The layman and a great number of accountants also feel that rent is a cost as much as is the payment of wages. If the concern which pays rent includes the amount paid as a cost—then, to be consistent, the concern which owns the land and buildings should also make a charge for rent. It is not sufficient that the expenses of owning the building (i.e. taxes, depreciation, and interest) be charged as manufacturing expenses. The business has money invested in the property, on which it is entitled to a fair return. This property is at the disposal of the manufacturing department, and should be paid for. The solution of the problem is to make a charge for the reasonable rental value of the property to the manufacturing department. The accounts would then show the true cost of manufacturing and would show also the income received by the business as owner of the land. As a device for distinguishing clearly between profits arising from manufacturing, and those arising from the ownership of real

¹See the chapter on "Financial Statements."

estate, the practice of organizing a separate corporation to hold the title to real estate has its advantages.

If we are to make a charge for rent—which charge includes interest on the capital invested—why should we not make a charge for all capital invested? The basic question is, whether or not any additional accuracy in cost records can be obtained by including a charge for interest among the manufacturing expenses. Of course, such an entry cannot affect the net profit or loss of the business as a whole, because the business neither receives nor pays out anything of value. In general, it is desirable to include interest in cost: (1) where materials must be stored for long periods while a seasoning process is being completed; (2) where it is desired to show the effects of variations in the amount of capital employed and in the lengths of the periods during which the capital is employed.

In the first case, we can readily see that if the merchandise were purchased in a seasoned state, a higher price would have to be paid, which price would necessarily include interest and other carrying charges. The interest on the capital tied up during the seasoning period is clearly a direct part of the cost.

To illustrate the second case, we may take that of a shoe factory making two classes of shoes—one bench-made, the other machine-made. In the making of the latter class, thousands of dollars worth of machinery must be employed, while in turning out the hand-made shoes only a bench and a few simple tools are required. The difference between the cost and the selling price of the hand-made shoes is almost entirely profit, while the mar-

gin on the machine-made line must include a return for the use of capital. In order that the difference between the cost and selling price of any unit may represent the actual profit, there must be added to the cost of the product a charge for the interest on the capital employed in its manufacture.

Arguments against the inclusion of interest in cost.

—There are certain practical objections, however, to including interest as an element of cost:

1. Inventories become inflated. Goods in process and finished goods, being inventoried at cost, will include interest.

2. The interest charge must be made at an arbitrary rate. Three possible rates may be used; (a) the pure interest rate, which is the charge for the use of money where the risk is zero;¹ (b) the rate at which money could be borrowed, which in turn depends upon the security offered, or (c) the rate which the given business might be expected to earn as a reasonable rate.

3. The interest charge is difficult to compute, since the charge for the use of the capital must be made on the double basis of value and time. The determination of the interest charges on current assets, which assets are never constant, is almost impossible.

4. The problem of the distribution of overhead charges is made more complex. All methods of distributing overhead are more or less arbitrary and it is desirable, therefore, to reduce the distributable overhead to a minimum. If we consider the contributors of money to the

¹ The element of risk is never altogether absent; the pure interest rate, therefore, is always merely a theoretical rate.

business as partners whose returns must be secured out of the margin between sales price and cost price, we can adjust all differences in length of processes and capital required by raising or lowering this margin. The margin of profit should vary inversely as the ratio of sales to capital—that is, the margin of profit in an industry in which the amount of the annual sales equals that of the capital employed should, the risk being equal, be four times as great as that in an industry where the amount of the annual sales is four times the amount of the capital employed.

Cost records.—The primary function of cost accounting, as we have noted above, is the calculation of the cost of each unit produced. By “each unit” we do not mean that in a shoe factory, for example, we should determine separately the exact cost of each pair of shoes. The unit is the division of the total production to which the costs are applied; it may be a single pair of shoes, a lot of shoes made at one time, or the entire year’s production of a single style. Some of the factors which should influence the selection of the accounting unit are discussed later in this chapter. Cost records should therefore contain the information as to the amount of materials, labor and overhead applicable to each unit.

Material records.—The cost for material allocated to each unit is dependent upon the quantity and the price per unit of the material used. Obviously, an accurate record of the quantity of material used for each unit can be kept most easily if one person is made responsible for the care and issuance of all the material. This person is usually given the title of “stores clerk.” Materials are

issued by the stores clerk only upon an order known as a "material requisition," or "bill of material," which may be made out by the foreman, superintendent or an official of the planning department. Each requisition, besides containing a list of the materials required, should bear a serial number, and also the number of the unit on which the material is to be used. The requisition may bear the same number as that of the production order—an order authorizing the manufacture of a unit of the product, and bearing a number by which the job is identified throughout the manufacturing process. In some of the manufacturing processes, such as assembling, it is possible to enter on the requisition, in advance, the exact amount of material to be used. In such cases the stores clerk issues the material called for by the requisition, prices the materials,¹ enters on his stock-records the amount of materials issued, and then turns the requisition over to the "cost clerk." If the amount of material required is not precisely determined, the amount issued will usually be in excess of the requirements, unused material being returned. This situation may be met by putting through the requisition for the total amount issued and then making out a credit memorandum or "stores-returned slip" for the amount returned. A somewhat simpler method is to hold up the requisition until the actual amount used is determined, a memorandum serving to record the amount of materials originally issued.

Pricing of material requisitions.—The materials should be charged to the work in process at cost. Where the same material has been purchased at different prices,

¹ In cases where secrecy is required, the pricing is done by the cost clerk.

there is a difference of opinion as to the price which should be used. The most equitable method would seem to be to "charge out" the material in the order received—that is, if material has been purchased in three succeeding lots at \$.50, \$.60 and \$.70 per pound, respectively, all the material purchased at \$.50 should be charged out before any at \$.60 is used. The store room should be so arranged as to permit the physical material to be disposed of in the same order. Another method is to average the price and charge out all units at the same price. This means that the average price must be recalculated each time new material is purchased. A third method is to use the latest price at all times. The effect of this method is to inflate the cost of production in times of rising prices, and to undercharge the work in process when prices are dropping. The last two methods have the additional disadvantage of carrying the inventory at prices which do not represent the cost of the material on hand.

The problem of by-products.—One of the most interesting problems of cost accounting is that of by-products. Where one product is produced as an indirect result of the manufacture of the main product what should be considered the cost of the by-product? To illustrate: to make a pair of "ladies' buck shoes" takes five feet of "buck" at \$.80 a foot. The small pieces left over are used to make children's shoes. What is the material cost of a pair of "ladies' " shoes? Should we say \$4.00, on the ground that we used up the five feet of leather, and that anything obtained from the small pieces is "found money;" or should we say that it is less

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than \$4.00; that the leather in the children's shoes did cost something? If the latter, what figure should we use? There are two figures which can be used—(1) the cost of similar small pieces of leather if purchased in the open market; or (2) the price which could be realized if the pieces were disposed of. Either figure would be acceptable, as there is very little to choose between them.

Related to the problem of by-products is that of scrap. Ordinarily, the amount recovered by the sale of cuttings, clippings, sawdust, and the like, does not enter into cost calculations. But the scrap of today is the source of the by-product of tomorrow. Where the value of the scrap is considerable, it is advisable to credit the cost of production and charge a "scrap account" with the amount of scrap on each unit.

Perpetual inventories.—If the stores clerk is to be made responsible for the recording of the materials issued, he must be responsible also for the materials on hand. It is evident that if we charge him with all he receives and credit him with all he issues, the balance will be the amount he should have on hand. If the amount actually on hand, as shown by a physical inventory, agrees with this balance, it is proof that his work has been properly performed. The amount which should be on hand is found by a comparison of the amount purchased with the total of the requisitions issued. Records are kept, of course, of each separate class of material. Each stock sheet should be provided with spaces entering (1) the number of units received; the cost per unit; and the amount; and (2) the number of units issued; the cost per unit; and the amount—the sheet or card being headed

with the name of the item, or its number or mnemonic symbol. Additional information may be recorded on the sheets, such as: quantity ordered, quantity applied on orders, balance available, minimum and maximum quantities, and so on. A typical stock sheet is illustrated on the following page.

The total amounts entered on the stock cards as received must be charged in total to the Materials Account in the general ledger. The charge to the Materials Account is usually made from the purchase journal or voucher register. Various devices are used to insure that all merchandise has been received and properly entered on the stock record.

The requisitions, as previously explained, are priced and extended.¹ From the requisitions, postings of the amounts of material issued are made to the stock sheets. The total of all requisitions is posted periodically—daily, weekly, or monthly—to the credit side of the Materials Account in the general ledger. The balances of the stock sheets, in dollars and cents, are listed monthly, and should always agree in total with the balance of the Materials Account. Comparison of the stock sheets with the actual stock need not be deferred until the close of the fiscal period; inventories of different classes of goods can be taken at different times. This, of course, does away with the troublesome and expensive annual inventory, which often means the closing down of the factory for several days.

Discrepancies between the stock record and the physical inventory may be due to loss in weight, carelessness in

¹The detailed prices of the materials are shown and the total amount of the requisition.

issuance, or theft. When such discrepancies are noted, the stock record should be adjusted to agree with the actual stock.

Labor records.—The chief purpose in the recording of labor costs is to ascertain the cost of the labor applicable to each unit. Where the laborers are paid by piece-work, little difficulty is experienced in obtaining the necessary information. Care must be taken, of course, to enter correctly the production numbers of the units produced. To this end, a coupon for each piece-work operation is usually attached to the production order. This coupon contains the production-order number, the number of units in the order, and the rate per unit to be paid for the operation.¹ The coupon is detached by the worker and, after being "O K'd" by the foreman, it is turned in to the payroll department. Of course this means that the distribution of the labor charges to the production units is delayed until after the worker has been paid.

Where the worker is paid by the day or by the week, it is necessary to record the time spent by each worker on each unit. The total time for which the worker is paid must be accounted for and distributed to the various units. If this is not done, the total amount charged to work in process (which is the total of the direct-labor payroll), will not agree with the total amounts charged

¹In some industries, where the piece-rates are complicated, it has been found that the clerks preparing the coupons make errors in the rates, which when in favor of the employee are seldom or never reported to the office when the coupons are checked up; any time for which the employee is paid and which is not accounted for by a job ticket should be charged to "lost time." Loss may be due to lateness in starting work in the morning and at noon, delays between jobs or payment for holidays. "Lost time" by this method stands out as a separate factor of cost and may therefore be controlled.

to the various cost units. The use of time clocks or stamps for recording starting and finishing time in each "job" is perhaps the most accurate method of obtaining the necessary information. The payroll should preferably be made up from a time record kept independently of the job record.

Quite often there may be a number of small operations which must be performed on every unit of the product. To require the worker to record the time spent on each "job" in such cases is unnecessary. All that is necessary is for him to enter the production numbers of the jobs he has worked on and the number of units in each job. The individual jobs or cost units may be charged on the basis of a rate per unit estimated on the basis of cost of production. The under- or over-estimate may be adjusted periodically. To illustrate: In shoe manufacturing, there is an operation called "channel opening" which must be performed on all Goodyear shoes. A worker receiving \$18.00 per week should be able to handle 2,400 pairs of shoes a week at a cost per pair of $\frac{3}{4}$ of a cent. If in a certain week he makes only 2,000 pairs, included in which is lot number 7, consisting of 80 pairs, lot number 7 would be charged with 60 cents. The total charge to goods in process would only account for \$15.00; the remaining \$3.00 would be charged to a Labor Adjustment account. If the production continued at 2,000 pairs, the rate would be raised to one cent per pair. Somewhat similar is the treatment of learners on piece-work operations who are paid a guaranteed minimum-wage. The individual jobs are charged at the usual piece-rate, the unearned wage being charged to an expense account

such as "Week Work Loss." The training of new employees is always expensive; the startling cost of such training is impressed upon the manager when he undertakes to account for every minute of the time for which he is paying.

Perhaps the most difficult problem is to get time records from piece workers. This is necessary when the overhead distribution is made on a time basis. The week worker, being paid for his time, is not greatly concerned as to how he disposes of it, but the piece worker, who is paid only for what he produces, resents the management's attempt to make him do the clerical work of recording his time. The clerical work required of piece workers, therefore, should be reduced to a minimum.

The distribution of overhead.—Overhead, as we have seen, is composed of a number of varied elements. The problem before the cost accountant is to distribute this total of expenses over the units of production in such a manner as to "load" each unit with its just share. This distribution may be made on any one of a number of bases, the one chosen being that which is best suited to the type or condition of business. The main bases or methods of distribution are:

1. Direct-labor cost
2. Direct-labor hours
3. Prime cost
4. Old machine-rate
5. Fixed machine-rate

Direct-labor cost.—The theory of the plan in which direct-labor cost is used as the basis is that there exists a certain relation between the total manufacturing or

factory overhead of a plant and the total wages of all direct or productive laborers; and that the same ratio holds between the manufacturing overhead of an "accounting" or "statistical" unit and its direct-labor cost. To illustrate: Suppose that the total manufacturing overhead is \$15,000, and the total direct-labor cost, \$30,000. The ratio as computed is termed the "expense proportion," or "per cent." The ratio in the above case would be found by dividing the manufacturing overhead of \$15,000 by the total direct-labor cost—\$30,000—giving 50 per cent. This per cent is applied, then, during the cost period, by multiplying the direct-labor cost of an "accounting unit" by this per cent. For example, if the direct-labor charge on a job amounts to \$6,000, the manufacturing overhead for the job would be $\$6,000 \times 50$ per cent, or \$3,000.

Advantages and disadvantages of direct-labor cost method.—The "direct-labor cost" method is the most simple of all manufacturing overhead distribution plans, and for this reason it is more generally used than is any other method. It is a satisfactory method, if labor is the major element in production, if the product is uniform in character, and if the units of product each consume about the same time in the technological processes. Uniformity, however, is rarely found except in isolated departments, and the plan for most concerns has serious disadvantages. The "direct-labor cost" method, however, does not require so much clerical labor as the "direct-labor hours" plan, or other methods based on time, since a calculation of the labor time on each unit is not needed in order to prorate the burden over the jobs.

Direct-labor hours.—The “direct-labor hours” plan is based on the theory that manufacturing burden increases in proportion to increase in the direct-labor hours in a factory. For example, let us say that the total manufacturing overhead of a concern and the total direct-labor hours for a given period are \$15,000 and \$30,000, respectively. The overhead charge per direct-labor hour would be found by dividing the overhead of \$15,000 by the number of hours—30,000—giving an overhead rate of 50 cents per direct-labor hour. A current job has taken, say, 1,000 direct-labor hours. The manufacturing overhead applicable to it is 1,000 times \$.50, or \$500.

The advantage of this method over the labor-cost method is that it takes into consideration the element of time. Many overhead items are functions of time. Hence, any method of overhead distribution with time as a basis has certain fundamental advantages. A disadvantage, however, is that this system involves the recording of the labor hours spent on each job.

Prime cost.—Where prime cost is taken as a basis, the total of direct-labor cost and direct-material cost is used in computing the burden ratio—e.g., a total manufacturing overhead of \$15,000 divided by \$50,000, the prime cost, equals 30 per cent. A job with a prime cost of \$9,000 would carry an overhead charge of $\$9,000 \times 30$ per cent, or \$3,000. This plan is rarely used, and is not usually applicable, unless the uniform conditions referred to in connection with the direct-labor cost plan are present, and unless the direct-labor charges and the direct-material charges are about equal to each other in amount.

Old machine-rate.—All machine rates are based upon the theory that overhead charges accumulate according to the number of running hours of the machines. The old machine-rate is extremely simple to compute and apply. The manufacturing overhead is ascertained for a stipulated period; this is divided by the sum of the hours the machines have been running during this period, and the result is the old machine-rate. In order to ascertain the proportion of the manufacturing overhead attributable to any given product, this rate is multiplied by the number of hours the product has been in process. The method is suitable, under certain conditions, for use in a single department, but is rarely applicable to the shop as a whole. This is true because it is not applicable unless such conditions are present as uniform original cost, uniform installation charges, uniform subsequent additions to the machines, uniform absorption of heat, light, power, and the like. It can readily be seen that such a uniformity of conditions will seldom be found.

Fixed machine-rate.—The fixed machine-rate method is more complicated than the old machine-rate. The entire factory is divided up into production centers—a production center being a department or a subdepartment where there exists a uniformity of manufacturing conditions. A production center may be an assembly space, a workbench, a machine, or a group of machines. The manufacturing overhead for the entire factory for the following fiscal period is then estimated. This estimate is based on past figures, present facts and future policies, and should be prepared by a committee of the factory and general executives.

The overhead estimate is made in detail, and each item of expense is prorated over the production centers on a suitable basis, as will be explained later. The total of the expenses allocated to each production center is then divided by the number of machines in the center, giving the total overhead chargeable to each machine for the entire fiscal period. This amount is divided by the standard number of working-hours in the fiscal period, giving the overhead charge for the operation of each machine in the production center for one hour.

The calculated hourly machine-rate is then applied as follows: The number of hours which a given job consumes in passing through a production center is determined, and the number of hours is multiplied by the machine-hour rate for that center, giving the manufacturing overhead chargeable to the job while passing through the given center.

If the machines do not run during all of the normal operating period, the charges to the individual jobs will not absorb the entire amount of estimated overhead. This unabsorbed overhead, or "unearned burden," is distributed over the entire product by a supplementary rate based on the total number of direct-labor hours for the period. The supplementary charge to each job is obtained by multiplying the total number of direct-labor hours on the job by the above-mentioned supplementary rate.

The following overhead distribution chart will show the method of arriving at the machine-hour rate and the proper basis for the apportioning of the various items of expense.

DISTRIBUTION OF ESTIMATED MANUFACTURING OVERHEAD

YEAR 1919

| ITEM | TOTAL | PRODUCTION CENTER | | | | | |
|--|------------|-------------------|------------|----------|----------|----------|----------|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| Administrative Expense Applicable to Factory | \$600.00 | \$100.00 | \$100.00 | \$100.00 | \$100.00 | \$100.00 | \$100.00 |
| Depreciation | 500.00 | 100.00 | 50.00 | 50.00 | 100.00 | 100.00 | 100.00 |
| Heat | 300.00 | 75.00 | 67.50 | 22.50 | 30.00 | 37.50 | 67.50 |
| Light | 300.00 | 75.00 | 67.50 | 22.50 | 30.00 | 37.50 | 67.50 |
| Indirect Labor | 1,000.00 | 600.00 | 200.00 | 50.00 | 50.00 | 50.00 | 50.00 |
| Insurance | 100.00 | 10.00 | 10.00 | 10.00 | 20.00 | 30.00 | 20.00 |
| Indirect Material | 100.00 | 10.00 | 20.00 | 30.00 | 10.00 | 20.00 | 10.00 |
| Power | 500.00 | 50.00 | 50.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Rent | 600.00 | 150.00 | 135.00 | 45.00 | 60.00 | 75.00 | 135.00 |
| Repairs and Maintenance | 250.00 | 55.00 | 30.00 | 40.00 | 55.00 | 35.00 | 35.00 |
| Taxes | 150.00 | 30.00 | 40.00 | 20.00 | 20.00 | 15.00 | 25.00 |
| Interest | 1,000.00 | 200.00 | 300.00 | 100.00 | 100.00 | 100.00 | 200.00 |
| Total | \$5,400.00 | \$1,455.00 | \$1,070.00 | \$590.00 | \$675.00 | \$700.00 | \$910.00 |
| Number of Machines | 20 | 5 | 4 | 2 | 2 | 3 | 4 |
| Overhead per Machine | | \$201.00 | \$267.50 | \$295.00 | \$337.50 | \$233.00 | \$227.50 |
| Standard Number of Hours | | 2,400 | 2,400 | 2,400 | 2,400 | 2,400 | 2,400 |
| Machine Hour Rate (in Cents) .. | | 12.15 | 11.15 | 12.32 | 14.04 | 9.7 | 9.46 |

Administrative charges applicable to the factory.—

Administrative charges applicable to the factory may be distributed over the production centers by one of three ways:

1. According to the approximate time spent by the administrative officials in each production center;
2. According to the direct-labor hours, estimated for each production center;
3. According to the number of laborers in each department.

Suppose that the only administrative charge is that of the superintendent, who gets \$2,400, spending three-fourths of his time in the general office, one-fourth in the factory, and an equal amount of this one-fourth in each of six production centers. One-fourth of his salary, or \$600, should be borne by the factory, and one-sixth of this by each production center, provided the salary is prorated, according to the time spent by the superintendent in each center.

Depreciation.—Depreciation can be closely estimated if the concern has kept a plant ledger. The figures in the table are arbitrary.

Indirect labor.—Indirect labor may consist of the labor charges of department heads, foremen, cost clerks, sweepers, inspectors, etc. Such items may be charged directly—e.g., if a foreman is employed in only one production center, his wage can be charged directly to the center; or, if he works in several centers, his wages can be prorated over these centers, according to the number of men under him in each department. The wages of truck handlers may be distributed over production centers

according to the volume of product handled for each center; the wages of sweepers according to the floor space of the centers. Again, arbitrary figures are entered in the table for indirect labor.

Heat.—The item of “heat” may be loaded onto the various production centers on the basis of their respective dimensions in cubic or square yards or feet. The heat cost in this problem is \$300 for a floor space of 4,000 square feet. The charge per square foot is \$.75, to be borne by each center appearing in the table as follows: Center 1—1,000 square feet; center 2—900 square feet; center 3—300 square feet; center 4—400 square feet; center 5—500 square feet; center 6—900 square feet.

Light.—If gas meters are maintained in each center the unit of measurement and distribution for the lighting charge is the cubic foot of gas. If the plant is lighted by electricity, and meters are used, the unit for measurement and distribution is the kilowatt hour. If there are no meters of any kind in the establishment, the square foot of floor space may serve as the unit of allocation of the light charges. Let us use the latter. Since the amounts of the total light bill and the total heat bill are equal, and since the methods of distribution are the same, the charges to light against each production center will be the same as the charges to heat.

Insurance.—It may be possible to charge a part of the insurance directly to production centers, if policies are taken out specifically on values in the individual centers. Otherwise, the allocation of insurance is made according to the respective values in the centers. Although floor dimensions in square feet may sometimes serve as

the basis of the distribution of insurance charges, this basis is obviously inequitable, because the values in the centers do not necessarily vary according to the areas. Here again, it is necessary to insert arbitrary figures in the table.

Indirect materials.—The nature and rate of consumption of "indirect material" being known, its approximate cost for the next period may be estimated. There is no special rule to guide one in spending this charge over the production centers. Where there is no special rule, the overhead is said to be dissected according to special allotment.

Power.—The charge for power is spread over the centers according to the estimated horse-power hours or kilowatt hours to be consumed by each center.

Rent.—The amount of floor space in square feet is the basis for the prorating of rent. Sometimes the relative values of floor space are also considered—e.g., in department stores the lower floor space is more valuable than that of upper floors, and side aisles are less valuable than the main aisles.

Repairs and maintenance.—Costs of repairs and maintenance may be a part of the total depreciation charge, or they may be segregated. If a concern is of any size it will probably maintain a repair department which will perform both repair work and construction work. The material, labor and overhead charges for this repair department are estimated. The prospective construction-work charges are subtracted from the total charges, and the difference is distributed to the centers. To find the percentage, the estimated repair and maintenance charges

for each center are divided by a sum representing the total valuation of the buildings and equipment.

This per cent is then applied to the values of buildings and equipment in each production center to get an estimated repair and maintenance charge for that center for the ensuing period.

Taxes.—The best way to prorate the charge for taxes is according to the assessed values in the centers, rather than on the basis of book values of the respective centers or on that of their floor space.

Interest.—The item of interest is dissected on the basis of book values rather than on that of insured values. If interest is not regarded as a part of manufacturing overhead, it should not be considered in computing the fixed machine-rate.

Standard labor hours.—The normal number of working hours for a year may be found by multiplying the standard number of hours per week, 48, 49, or 55, by 52 (the number of weeks in a year) and then subtracting an allowance for from 10 to 12 holidays. The estimate of 2,400 hours, used in the table, is based on a 48-hour week with an allowance for 12 holidays.

Idle time or "unearned burden."—In businesses chiefly of a seasonal nature, the problem of idle time or "unearned burden" is of considerable importance. That part of the overhead which is a function of time accumulates when the plant is idle, and consequently there is no product to which such overhead can be charged.

Idle time may be charged (1) to manufacturing cost, through the medium of a supplementary rate, as explained in connection with the handling of a fixed machine-rate.

It has been said that the ratio of the supplementary rate to the fixed machine-rate forms a sort of barometer the movements of which are an index of factory efficiency. If the supplementary rate is increasing disproportionately to the increase in the fixed machine-rates, then efficiency is decreasing. If this method of absorbing idle time is used, the costs, according to the records, will seem high when production is low, and low when production is high. This is so because in the latter case there are more units of output than in the former over which to prorate the burden. This results in a considerable fluctuation in the costs as between a busy and a dull season, and at such times in the business cycle comparative costs are not very helpful in the disentangling of business problems.

The reason for charging unearned burden to the factory is that the factory is "responsible." Idle time, however, may be due not to faulty production or to inferior quality of output, but to the inefficiency of the sales department, which may not be securing enough orders to keep the plant running. Hence, idle time may be charged (2) not to the factory but to the sales department.

Both the production and the selling divisions of the company's organization may be partially to blame for the idle time, which in such a case may be charged (3) against both of these departments. How much should then be charged to each is a very difficult question to decide.

Idle time, again, in the opinion of some accountants, should be charged neither to the factory nor to the sales department, but (4) should be treated in one of the following two ways:

(a) Debited directly to the profit and loss account in the period of its occurrence; or

(b) Charged against a "reserve for unearned burden" which has been built up out of large profits in busy seasons. The latter course is most often taken when the idle time is excessive.

The feeling of the writer is that the tracing of direct responsibility for idle time is a difficult task, and that in a majority of cases both the production and selling departments, as well as uncontrollable business conditions, are to blame.

Cost records and general books.—The records and methods used in determining the amount of materials, labor and overhead applicable to each unit of production have been explained and described. All that now remains is to explain how the three elements—materials, labor and overhead—are brought together, in order that it may be seen how the total cost of all units agrees with the total cost of production as shown by the general books.

The production order and the cost sheet.—Before we can obtain any information as to the cost of production of a given unit the unit must be identified, so that all material and labor expended in its manufacture may be charged to it. A production order, bearing a number and a full description of the goods included under the order, should be made out for each unit of production before it is put into work. The order should be made out in duplicate, one copy going to the factory and one remaining in the office. Additional copies may be made out if work on "job" is started in several places in the

factory. To the office copy is usually attached the cost sheet, although the latter may be separate. The production order follows the work through the plant, and all labor and material used are charged to the order number. If a coupon system of paying piece workers is used, the coupons may form a part of the production order.

The forms of cost sheets vary greatly. The essentials are: the order number; sufficient description to identify the product; and spaces for the entering of materials, labor and overhead. The arrangement depends upon the number of operations, method of payment of labor, and the method of distributing overhead.

On the following page is an illustration of a simple production-order and cost sheet, designed to record labor paid on a piece-work basis and providing for the distribution of overhead as a percentage of the direct-labor cost.

PRODUCTION ORDER AND COST SHEET
(ORIGINAL)

(ORIGINAL)

No.....

Date..

Date Wanted.....

Date completed.

Foreman: You are hereby authorized to manufacture the following articles:

Supt.

Dept.....

| Quantity..... | Description..... |
|---------------|---------------------|
| 1 | 100% Cotton T-Shirt |
| 2 | 100% Cotton T-Shirt |
| 3 | 100% Cotton T-Shirt |
| 4 | 100% Cotton T-Shirt |
| 5 | 100% Cotton T-Shirt |
| 6 | 100% Cotton T-Shirt |
| 7 | 100% Cotton T-Shirt |
| 8 | 100% Cotton T-Shirt |
| 9 | 100% Cotton T-Shirt |
| 10 | 100% Cotton T-Shirt |
| 11 | 100% Cotton T-Shirt |
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| 94 | 100% Cotton T-Shirt |
| 95 | 100% Cotton T-Shirt |
| 96 | 100% Cotton T-Shirt |
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| 100 | 100% Cotton T-Shirt |

Description..

General-ledger accounts.—On the following page will be found a chart of the general-ledger accounts which are affected by the cost system, together with a statement of the circumstances under which each account is debited or credited. This arrangement is consistent with the primary purpose or function of a system of cost accounting, which is to show the profit or loss resulting from the operations of the business as a whole, and also the profit or loss on each unit. The profit or loss of the business as a whole is shown invariably by the difference between the debit balance in the "cost of goods sold" account, and the credit balance in the "sales account." The details of this profit or loss may be found by listing each sale and setting against it the cost of the goods sold, as taken from the credit side of the finished-stock cards. This may be done at the time of entering the sale by providing an extra column in the sales book for entering the cost of each item. This is a convenient method of arriving at the total cost of goods sold each month. Various uses may be made of this information, among which uses are the determining of the profit or loss on each customer's account and the determining of the profit or loss on the product sold by each salesman.

MATERIALS

| | |
|--|--|
| Debited with inventory at the beginning of the period. | Credited with amount of materials issued, from daily, weekly or monthly totals of requisition. |
| Debited with materials purchased. | |

Balance indicates the amount of material on hand and should agree with the total balances of the stock cards.

PAYROLL

Debited with the actual amount of cash paid, as shown by cash book.

Credited with the total amount of the payroll for both direct and indirect labor.

Balance represents the amount of unpaid labor.

WORK IN PROCESS

Debited with inventory of goods in process at beginning of period.

Debited with amount of direct labor payroll.

Debited with amount of materials used from total of requisitions.

Debited with amount of overhead distributed as shown by the machine hour summary.

Balance represents the value of goods in process of manufacture and should agree with the total cost of all jobs in process as shown by the cost ledger.

Credited with the amount of work completed and transferred to finished stock.

FACTORY EXPENSE

Debited at end of fiscal period with the total of all expenses forming part of the factory overhead by transfer from the various expense accounts.

A debit balance indicates an under-estimate of the amount of overhead. The balance may be carried forward to the next fiscal period, or disposed of—either by closing out to Profit and Loss, or as an offset to an opposing balance in the overhead account.

Credited at beginning of period with estimated amount of overhead for the fiscal period.

A credit balance indicates an over-estimate of the amount of overhead. The balance may be carried forward to the next fiscal period or disposed of—either by closing out to Profit and Loss or as an offset to an opposing balance in the overhead account.

OVERHEAD

Debited at beginning of period with estimated amount of overhead for the fiscal period.

Credited from machine summaries with the amount of overhead distributed to goods in process.

Credited with amount of overhead distributed to goods in process by a supplementary rate (if any).

There will not ordinarily be a debit balance, as the unabsorbed overhead is distributed by the supplementary rate. If the factory expense appears to have been over-estimated the undistributed overhead may be used to offset such over-estimate.

A credit balance indicates that the number of machine hours has exceeded the normal amount. This is usually accompanied by an increase in the amount of expense over the estimate, in which event the balances are offset against one another.

FINISHED GOODS STOCK

Debited with inventory of finished goods at beginning of period.

Debited with work completed at cost shown by cost ledger.

Debited with returned sales at cost.

Credited with goods sold (at cost).

Balance represents the amount of finished goods on hand and must agree with the total balance of the finished stock cards.

COST OF GOODS SOLD

Debited with the cost of goods sold.

Credited with cost of goods returned.

The balance of this account shows the cost of net sales. The difference between this balance and the net sales represent the profit on sales. At the end of the period the balance is closed out either to sales or to Profit and Loss.

Cost-controlling accounts.—It should be noticed also that three new controlling accounts have been created, namely, Materials, Work in Process and Finished Goods. The balance of the Materials account always represents the amount of materials on hand, valued at cost. It should always agree with the total of the balances of the stock sheets or stock cards, which form a subsidiary ledger called the Materials or Stock Ledger. The Work in Process account indicates the total amount of material, labor and manufacturing overhead expended on uncompleted work. The balance of this account must agree with the total charges on the cost sheets of the jobs in process. The debits to the Work in Process account, which are for material, labor and manufacturing overhead, must, of course, agree with the total of the charges for these items to the individual jobs or other "units." The total amount of materials used is obtained by totaling the amounts of the material requisitions periodically. The total labor is found by adding up the job tickets, piece-work coupons, or time tickets. Attention has been called to the fact that the total credit to payroll for direct labor may be greater than the debit for labor to work in process, the balance of the entry consisting of charges to such expense accounts as Idle Time, Week Work Loss, etc. Where the machine-hour method of distributing the manufacturing overhead is used, the total amount of burden entered on the cost sheets may be found by sorting the time cards by production centers and multiplying the total number of hours in each center by the proper machine-hour rates, as in the following machine-hour summary:

MACHINE-HOUR SUMMARY

| DAY | PRODUCTION CENTER | | | | |
|----------------|-------------------|---------|---------|---------|---------|
| | 1 | 2 | 3 | 4 | 5 |
| M | 16 | 27 | 16 | 18 | 18 |
| T | 18 | 27 | 18 | 18 | 18 |
| W | 15 | 27 | 18 | 18 | 18 |
| TH | 18 | 27 | 18 | 16 | 18 |
| F | 18 | 20 | 18 | 18 | 18 |
| S | 6 | 9 | 6 | 6 | 6 |
| TOTAL | 91 | 137 | 94 | 94 | 96 |
| RATE | \$0.12 | \$0.11 | \$0.13 | \$0.14 | \$10.00 |
| OVER-HEAD | \$10.92 | \$15.07 | \$12.22 | \$13.16 | \$9.60 |
| TOTAL OVERHEAD | \$60.97 | | | | |

As soon as the last process is entered on the cost sheet of a job, it is taken from the "in work" file or binder. The number of units, cost per unit and total cost of the job are entered on the finished-stock cards. The cost of the finished jobs is totalled weekly or monthly, and a journal entry is made debiting Finished Goods Stock and crediting Work in Process. The cost sheets are then filed for future reference. The Finished-goods Stock, the third controlling account, must always agree with the total of the balances on the finished-stock cards.

The advantage of these three controlling accounts is apparent. They indicate at all times the amount of the total inventory, classified as to Materials, Work in Process, and Finished Stock, each class being further analyzed in the subsidiary records. This information is especially valuable in the event of loss by fire or theft.

General overhead.—Up to this point nothing has been said about “general overhead” except to distinguish it from “factory overhead.” The general overhead must be added to the cost of manufacturing before the total cost can be determined. Nevertheless, it is not customary to make any entry of it upon the cost sheets, the Cost-of-goods-sold account representing, as we have seen, the manufacturing cost. The difference between the Cost-of-goods-sold account and the Sales account is the profit on sales, and from this difference the selling and administrative expenses must be deducted in order to show the amount of the net profit.

Cost records in their relation to the selling price.—

In calculating the selling price, an allowance is made for general overhead as a certain percentage of the sales price, the percentage being based on the past experience of the business. Thus, if the sales for the previous year were \$1,000,000 and the general overhead \$80,000, the overhead for the succeeding period would be figured at 8 per cent.

In order to ascertain the proper selling price, there must be added to the factory cost the general overhead, and an allowance for the desired profit. As both of these percentages are based on the unknown selling price, we must draw upon our knowledge of arithmetic to solve the problem.

If we call our desired selling price 100 per cent, we must subtract 8 per cent for overhead, and, let us say, 5 per cent for profit—a total of 13 per cent. Our cost, then, must be 87 per cent of the selling price. If the cost is \$1.00, the selling price is to be $\$1.00 \div .87$ or \$1.15.

The general overhead is sometimes figured as a percentage of the manufacturing cost, the result being practically the same as when it is calculated by the percentage-of-sales method.

Essentials of cost forms.—It has not been possible within the limits of this chapter to present a complete set of the forms used in a cost system. Very little, if anything, has been lost by their omission. A cost system does not, as so many seem to assume, consist merely of a number of forms. A cost system is an application of the principles of cost accounting to a particular business. In devising forms, the main things to be considered are the information the form should furnish, where the information is to be obtained, and what disposition is to be made of the information. If the form contains provisions for entering the necessary information in a manner convenient to the person who must furnish the information, the selection of the size and arrangement of the form will be a comparatively simple matter.

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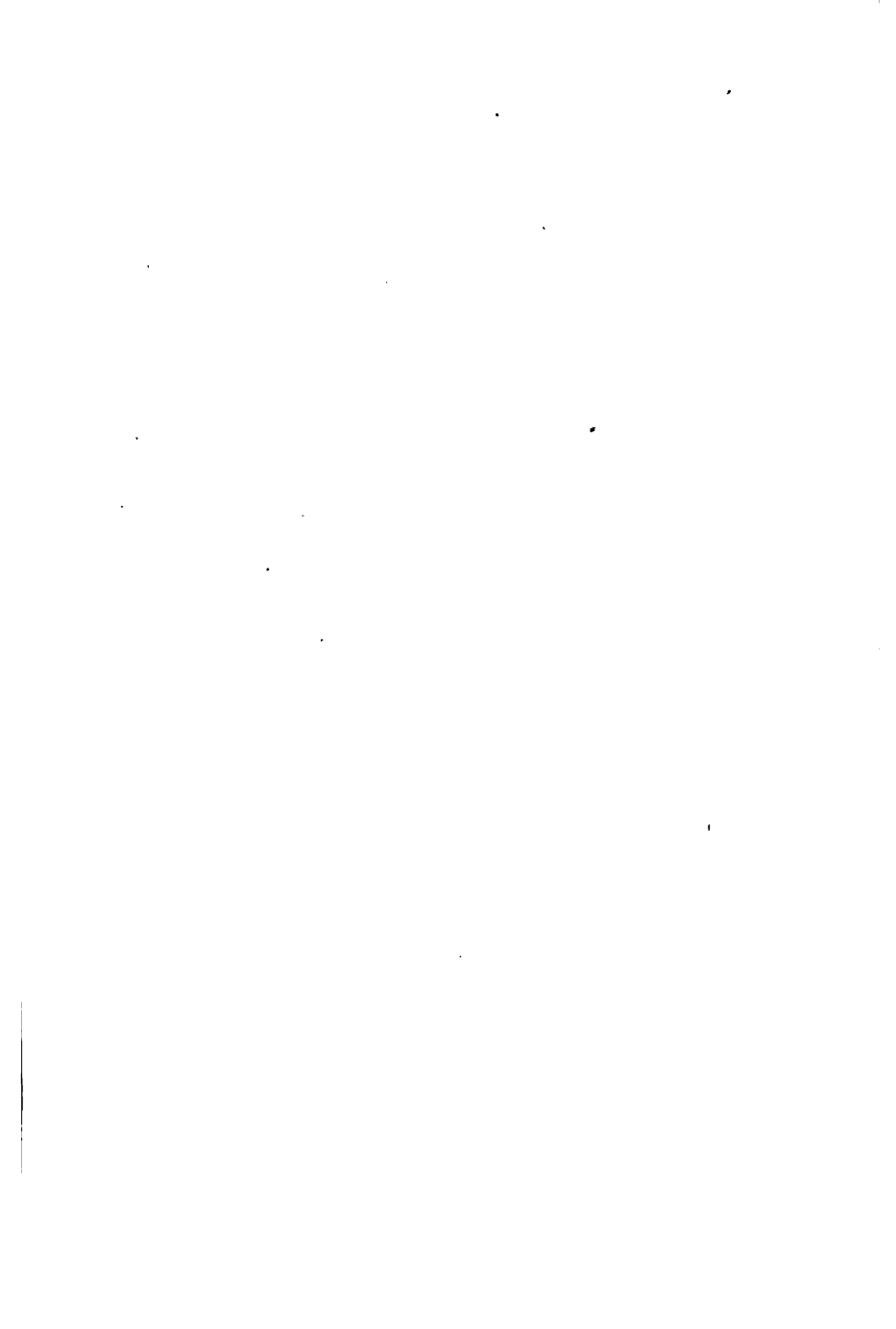
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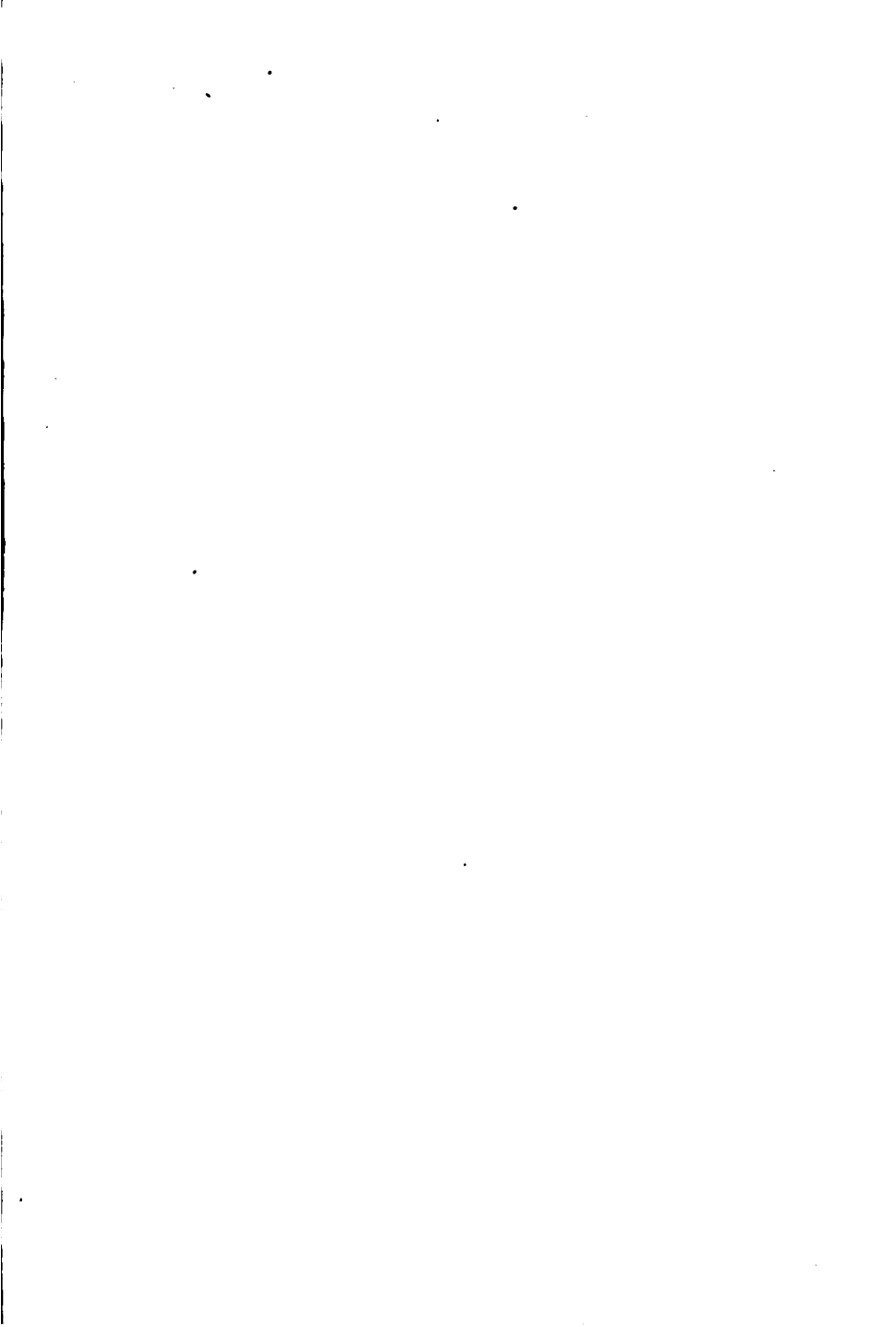
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